DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 319TH AIR REFUELING WING (AMC)
GRAND FORKS AIR FORCE BASE, NORTH DAKOTA

25 October 2004

MEMORANDUM FOR 319 ARW/CV

FROM: 319 ARW/JA

SUBJECT: NASA DC-8 Potential Beddown – Finding of No Significant Impact

1. ISSUE/RECOMMENDATION: I reviewed a Finding of No Significant Impact (FONSI) for the above-referenced project. The proposed FONSI is legally sufficient.

2. LAW: National Environmental Policy Act, 32 CFR Part 989

3. FACTS: UND has proposed to beddown at Grand Forks Air Force Base a NASA DC-8 research aircraft currently at Edward's Air Force Base. They have prepared a FONSI for agency signature.

4. DISCUSSION: From a legal viewpoint, the projected impacts are not significant. The Environmental Assessment describes alternatives and impacts to the environment. The FONSI describes why the project would not have a significant effect on the human environment or other features of the natural environment.

5. RECOMMENDATION/CONCLUSION: Recommend approval of FONSI

6. If you have any questions, I can be reached at ext. 7-3618.

Mark W. Hanson

MARK W. HANSON, GS-12, DAF
Chief, General Law

Report Documentation Page

Form Approved
OMB No. 0704-0188

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14. ABSTRACT

The National Aeronautics and Space Administration (NASA) operates a DC-8 aircraft that supports their Earth Science Enterprise. This one-of-a-kind aircraft is currently based at Edwards AFB and is owned/funded/operated by NASA as an atmospheric research aircraft. NASA has decided to outsource the operating costs of this aircraft to cut expenditures. The University of North Dakota has a very active and growing aerospace research program and desires to operate this aircraft from the Grand Forks area; however, the local airport is too small to support operations of a DC-8. UND submitted a site survey request to AF/llEPB to determine the feasibility of bedding down this aircraft at Grand Forks AFB. AF!ll..EPB approved the request on 31 March 2004. NASA and UND will operate the aircraft to acquire data for a variety of earth science research projects. The site survey report specifies the need for an Environmental Assessment (EA) to be conducted related to the proposed beddown. This EA has been prepared in accordance with the National Environmental Policy Act of 1969 Council on Environmental Quality, and Air Force Environmental Impact Analysis Process. The proposed action would be implemented utilizing the existing facilities and infrastructure available on Grand Forks AFB. Relevant resources evaluated in this EA inc:lude air quality, soil resources, water resources, biological resources, cultural resources, noise, socioeconomics, environmental justice, transportation, and environmental programs. The 319 CES, NASA and UND considered alternatives to the Grand Forks AFB beddown of the NASA DC-8, but these alternatives did not meet the selection criteria and were eliminated from further consideration. In addition to the analysis of potential impacts from implementation of the proposed action and no action alternative, the EA evaluates cumulative impacts of past, present, and reasonably foreseeable future actions relevant to the proposed action.

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 319TH AIR REFUELING WING (AMC)
GRAND FORKS AIR FORCE BASE, NORTH DAKOTA

OCT 2 8 2004

MEMORANDUM FOR HQ AMC/A75
507 Symington Dr
Scott AFB IL 62225-5022

FROM: 319 ARW/CC
460 Steen Blvd
Grand Forks AFB ND 58205-6231

SUBJECT: NASA DC-8 Beddown at Grand Forks AFB

1. The University of North Dakota (UND) has completed an environmental assessment resulting in a finding of no significant impact (FONSI) concerning the proposed beddown of a NASA DC-8 aircraft at this base to enable UND to perform airborne earth science research. The FONSI, signed by the UND President must also be co-signed by the AMC/CV. Request your offices process the package to obtain AMC/CV approval.

2. You may contact our base POC, Mr. Wayne Koop, 319 CES/CEV, DSN 362-4590 or wayne.koop@grandforks.af.mil if you need any further information.

JOEL S. REESE, Colonel, USAF
Commander

Attachment
NASA DC-8 Beddown Assessment

FINDING OF NO SIGNIFICANT IMPACT
Environmental Assessment
NASA DC-8 Beddown
at Grand Forks AFB, North Dakota

Introduction

This Finding of No Significant Impact (FONSI) was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, 42 United States Code (USC) 4231 et seq., as amended in 1975; Council on Environmental Quality (CEQ), 40 Code of Federal Regulations (CFR) §§ 1500-1508; and Environmental Impact Analysis Process (EIAP), 32 CFR § 989. The decision in this FONSI is based upon information contained in the environmental assessment (EA) of the proposed NASA DC-8 Beddown at Grand Forks Air Force Base (AFB), North Dakota. The EA analyzed potential environmental consequences from implementation of the proposed action or no action alternative.

Background

The National Aeronautics and Space Administration (NASA) and the University of North Dakota (UND) propose to beddown a NASA DC-8 airborne science research aircraft at the Grand Forks Air Force Base (AFB). The purpose of the DC-8 is to support NASA's Earth Science Enterprise. This one-of-a-kind aircraft is currently based at Edwards AFB and is owned/funded/operated by NASA as an atmospheric research aircraft.

NASA has decided to outsource the operating costs of this aircraft to cut expenditures. UND has a very active and growing aerospace research program and desires to operate this aircraft from the Grand Forks area. The local airport from which UND bases their aerospace operations is too small to support the operations of a DC-8, therefore requiring NASA and UND to identify a suitable location to beddown the aircraft.

NASA, UND and the 319 CES considered alternatives for the DC-8 beddown at Grand Forks AFB, but the alternatives did not meet specific selection criteria and were therefore eliminated.

There are three parts to the proposed action (1) modification of existing hangar 600 to accommodate NASA DC-8 operations, (2) support of NASA DC-8 operations on an on-going

Contractors and support personnel performing the action would be required to submit these plans and specifications to the 319 CES for approval prior to initiating work.

Decision

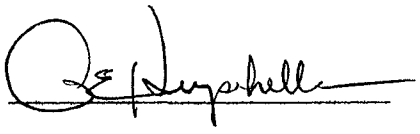
Based on the review of the EA, I have decided to proceed with the proposed action. The potential impacts to the human and natural environment were evaluated relative to the affected environment. For each environmental resource or issue, anticipated direct and indirect effects were assessed, considering both short- and long-term project impacts. The following paragraph summarizes the evaluation of environmental consequences.

No significant impacts to air quality, soil, biological resources, vegetation, wildlife, cultural resources, noise, socioeconomics, environmental justice, transportation, hazardous waste management, wastewater management, solid waste management, installation restoration program sites, asbestos-containing material, and lead-based paint would be expected from implementing the proposed action. Potential impacts were evaluated using one month for hangar modification and ongoing for support activities.

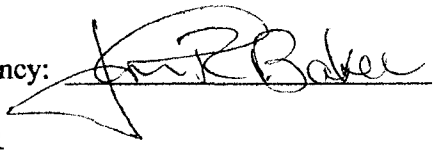
Under the no action alternative, there would be no change to the baseline conditions for the resources evaluated.

Conclusion

In accordance with the CEQ regulations implementing NEPA and the USAF EIAP, I conclude that implementation of the proposed action will have no significant impact on the quality of the human environment and that the preparation of an environmental impact statement is not warranted.

Approved by:  Date: 9/22/04

Dr. Charles E. Kupchella, President, University of North Dakota

Coordinating Agency:  Date: 12/21/04

JOHN R. BAKER
Lieutenant General, USAF
Vice Commander, Air Mobility Command

Environmental Assessment

Beddown of NASA DC-8
at Grand Forks Air Force Base

Grand Forks, North Dakota

Prepared by:
University of North Dakota
Safety & Environmental Health
Grand Forks, ND

September 2004

UND UNIVERSITY OF NORTH DAKOTA

COVER SHEET

Environmental Assessment
NASA DC-8 Beddown
at Grand Forks AFB, North Dakota

Lead Agency: University of North Dakota (UND)

Proposed Action: Beddown a NASA DC-8 research aircraft currently at Edward's Air Force Base to the Grand Forks Air Force Base (AFB).

Written comments and inquiries regarding this document should be directed to: Mr. Jason Uhlir, Director of Safety and Environmental Health/Risk Management or Mr. Greg Krause, Director of Radiation and Chemical Safety, Safety and Environmental Health Office, University of North Dakota, Box 9031 Grand Forks, ND 58202, 701-777-3341

Report Designation: Final Environmental Assessment (EA)

Abstract: The National Aeronautics and Space Administration (NASA) operates a DC-8 aircraft that supports their Earth Science Enterprise. This one-of-a-kind aircraft is currently based at Edwards AFB and is owned/funded/operated by NASA as an atmospheric research aircraft.

NASA has decided to outsource the operating costs of this aircraft to cut expenditures. The University of North Dakota has a very active and growing aerospace research program and desires to operate this aircraft from the Grand Forks area; however, the local airport is too small to support operations of a DC-8. UND submitted a site survey request to AF/ILEPB to determine the feasibility of bedding down this aircraft at Grand Forks AFB. AF/ILEPB approved the request on 31 March 2004. NASA and UND will operate the aircraft to acquire data for a variety of earth science research projects. The site survey report specifies the need for an Environmental Assessment (EA) to be conducted related to the proposed beddown.

This EA has been prepared in accordance with the National Environmental Policy Act of 1969, Council on Environmental Quality, and Air Force Environmental Impact Analysis Process. The proposed action would be implemented utilizing the existing facilities and infrastructure available on Grand Forks AFB. Relevant resources evaluated in this EA include air quality, soil resources, water resources, biological resources, cultural resources, noise, socioeconomics,

environmental justice, transportation, and environmental programs. The 319 CES, NASA and UND considered alternatives to the Grand Forks AFB beddown of the NASA DC-8, but these alternatives did not meet the selection criteria and were eliminated from further consideration. In addition to the analysis of potential impacts from implementation of the proposed action and no action alternative, the EA evaluates cumulative impacts of past, present, and reasonably foreseeable future actions relevant to the proposed action.

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ACRONYMS AND ABBREVIATIONS

ACM	asbestos-containing materials
AFB	Air Force Base
AFI	Air Force Instruction
AFOSH	Air Force Occupational Safety and Health
AGE	air ground equipment
AICUZ	Air Installation Compatible Use Zone
AMC	Air Mobility Command
ARW	Air Refueling Wing
AT/FP	anti-terrorism/force protection
ATC	air traffic control
BEA	Bureau of Economic Analysis
BMP	best management practice
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CES	Civil Engineering Squadron
CEV	Civil Engineering Environmental
CFR	Code of Federal Regulations
CO	carbon monoxide
CPTS	Comptroller Squadron
CS	Communication Squadron
CWA	Clean Water Act
dB	decibel
dBA	A-weighted decibel
DD	Department of Defense
DoD	Department of Defense
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
EO	Executive Order
EPA	Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
ESA	Endangered Species Act
ESQD	explosive safety quantity distance
FAA	Federal Aviation Administration
FONSI	Finding of No Significant Impact
GFK	Grand Forks International Airport
GIS	Geographic Information System
GOV	government owned vehicle
H_2S	hydrogen sulfide
HAP	hazardous air pollutants
HAZMART	hazardous materials pharmacy program
ICRMP	Integrated Cultural Resources Management Plan
INRMP	Integrated Natural Resources Management Plan

ACRONYMS AND ABBREVIATIONS (cont'd)

IRP	installation restoration program
Kg	kilogram
LBP	lead-based paint
mg/m^3	milligrams per cubic meter
MSP	Minneapolis/St. Paul Airport
MXG	Maintenance Group
NAAQS	National Ambient Air Quality Standards
NASA	National Aeronautics and Space Administration
NDAAQS	North Dakota Ambient Air Quality Standards
NDAC	North Dakota Administrative Code
NDDH	North Dakota Department of Health
NDJS	North Dakota Job Service
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
NO_2	nitrogen dioxide
NO_X	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
O_3	ozone
OSHA	Occupational Safety and Health Act
OSS	Operations Support Squadron
Pb	lead
PM_{10}	particulate matter less than 10 microns in diameter
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
POV	privately owned vehicle
ppm	parts per million
PSD	prevention of significant deterioration
RACM	regulated asbestos containing materials
RAPCON	radar approach control
RCRA	Resource Conservation and Recovery Act
ROI	region of influence
SAIC	Science Applications International Corporation
SAGE	Semi-Automatic Ground Environment
SARA	Superfund Amendments and Reauthorization Act
SFS	Security Forces Squadron
SHPO	State Historic Preservation Office
SHSND	State Historical Society of North Dakota
SO_2	sulfur dioxide
STARS	Standard Terminal Automation Replacement System
tpy	tons per year
TSP	total suspended particulates
UFC	Unified Facilities Criteria

ACRONYMS AND ABBREVIATIONS (cont'd)

$\mu g/m^3$	micrograms per cubic meter
UND	University of North Dakota
USAF	U.S. Air Force
USEPA	United States Environmental Protection Agency
USC	U.S. Code
VOC	volatile organic compounds

EXECUTIVE SUMMARY

Environmental Assessment NASA DC-8 Beddown at Grand Forks AFB, North Dakota

Introduction

The National Aeronautics and Space Administration (NASA) and the University of North Dakota (UND) propose to beddown a NASA DC-8 airborne science research aircraft at the Grand Forks Air Force Base (AFB). Grand Forks AFB encompasses 4,830 acres of land in the central portion of Grand Forks County in eastern North Dakota.

Purpose and Need

The purpose of the DC-8 is to support NASA's Earth Science Enterprise. This one-of-a-kind aircraft is currently based at Edwards AFB and is owned/funded/operated by NASA as an atmospheric research aircraft.

NASA has decided to outsource the operating costs of this aircraft to cut expenditures. UND has a very active and growing aerospace research program and desires to operate this aircraft from the Grand Forks area. The local airport from which UND bases their aerospace operations is too small to support the operations of a DC-8, therefore requiring NASA and UND to identify a suitable location to beddown the aircraft.

Proposed Action

There are three parts to the proposed action (1) modification of existing hangar 600 to accommodate NASA DC-8 operations, (2) support of NASA DC-8 operations on an on-going basis, (3) implementation of environmental controls during modification and operation support activities for protection of the human and natural environment.

1. Modifications to the hangar 600 would be necessary to support the operations of the NASA DC-8. Hangar 600 already has much of the required facilities and infrastructure needed to support the operation of the NASA DC-8; therefore, modifications would be minimal. Modifications would potentially include upgrades to existing plumbing, electrical, HVAC,

network cabling and carpentry work. The hangar's existing doors may need modifications to fit the fuselage of the DC-8.

2. Instrumentation suites are loaded onto the aircraft for an average of three NASA missions a year. Additional missions will likely be conducted by UND and other academic, federal, or state research organizations.

The DC-8 would require approximately 7-8 months per year to be hangared based on the following breakdown:

- Approximately 2 months for each mission upload, prep, and download.
- Approximately 1 month for scheduled and unscheduled maintenance.
- Aircraft must be in the hangar when mission instrumentation is onboard and:

  (a) The temperature is less than 50F

  (b) Icing is forecast

Support and facility use agreements will be developed between Grand Forks AFB, UND and NASA regarding the DC-8 beddown.

3. All work shall be performed in accordance with applicable federal, state, and local regulations and guidelines, including best management practices (BMPs), to protect the human and natural environment. Construction and support activities would be conducted in accordance with USAF safety regulations and standards prescribed by the Air Force Instruction 91-301, Air Force Occupational Safety and Health. Environmental controls would include, but not be limited to, preconstruction survey report, health and safety plan, pollution prevention plan, storm water protection plan, erosion and sediment control plan, waste disposal plan, and dust control plan. Contractors and support personnel performing the action would be required to submit these plans and specifications to the 319 CES for approval prior to initiating work.

No Action Alternative

This alternative would leave the Grand Forks AFB unchanged from its current status. With regard to environmental conditions, baseline conditions would continue at Grand Forks AFB as described in Section 3.2.

Environmental Consequences

No significant impacts to the environment would be expected from implementing the proposed action. Potential impacts were evaluated using one month for hangar modification and ongoing for support activities. Under the no action alternative, there would be no change to the baseline conditions for the resources evaluated.

Air Quality. Implementation of the proposed action would have no significant impacts on air quality.

Soils. No soils would be disturbed by the implementation of the proposed action.

Water Resources. No impacts to water resources would be expected.

Biological Resources. Long-term negative impacts to vegetation, wildlife, and threatened and endangered species would not occur. The long history (almost 50 years) of maintaining turf grass in the airfield operations area has minimized the ecological value of biological resources; and no threatened, or endangered species occur at Grand Forks AFB. Grand Forks AFB has some rare species that coexist with current KC-135 operations; therefore, addition of the DC-8 aircraft would have negligible impact on these.

Cultural Resources. The proposed action will require alteration of Building 600, but will not impact any other buildings. Building 600 is not a National Register of Historic Places (NRHP) - eligible or potentially eligible site. Appropriate measures would be in place in the event of a discovery of previously unrecorded sites. Therefore, the proposed action would not impact any buildings or structures eligible or potentially eligible for listing on the NRHP.

Noise. Long-term impacts from noise would not be expected. Short-term impacts associated with the rare take-off and landing of the DC-8 would be minor, temporary, and cease at the completion of these activities. Further, the noise levels would be no greater than those resulting from the routine take-off and landing of the existing KC-135 tankers.

Socioeconomics. The proposed action would involve relocation of approximately eight personnel to the region of influence (ROI) who would be based with the aircraft. This would be a very minimal population increase considering the existing population of the city of Grand Forks and the surrounding area. The economic benefits would be very minimal, but would

include potential increases to the community's property, sales, and income tax base. There would be no long-term changes to employment and income potential in the ROI.

Environmental Justice. There are no low-income or minority populations within or immediately adjacent to the project areas; therefore, no impacts to environmental justice would be expected.

Transportation. The movement of equipment and vehicles would be insignificant at Grand Forks AFB.

Environmental Programs. Implementation of the proposed action will result in the use of hazardous materials with regard to the research projects occurring on the aircraft. These hazardous materials are used in small, laboratory scale quantities, however, so no significant impact is expected from their use. All hazardous materials used in the research activities conducted on the aircraft or in the hangar will be handled by UND or the research sponsoring agency. Hazardous materials no longer needed for DC-8 missions will be transported to the UND Chemical Storage Building (Building #186) where a hazardous waste determination and characterization will be made. Hazardous materials associated with the operation and maintenance of the aircraft would not differ from those materials already used to support other aircraft on the Grand Forks AFB. Long-term impacts to hazardous materials and waste management, storm water and wastewater management, solid waste management, installation restoration program sites, asbestos-containing material abatement, and lead-based paint abatement would not occur.

Cumulative Impacts. The potential environmental impacts resulting from the incremental impacts of the proposed action when added to other past, present, and reasonably foreseeable future actions were considered for the cumulative impacts analysis. The USAF land use planning process is designed to ensure efficient use of available resources and that the functional relationships of land use arrangements meet the goals and objectives of the base. This process includes an evaluation of environmental impacts for any future actions, as well as their cumulative impact, which would also consider the DC-8 beddown. Limited growth is anticipated at Grand Forks AFB and no major mission changes or population fluctuations are anticipated in the foreseeable future.

1.0 PURPOSE AND NEED FOR ACTION

1.1 Introduction

The National Aeronautics and Space Administration (NASA) and the University of North Dakota (UND) propose to beddown a NASA DC-8 airborne science research aircraft at the Grand Forks Air Force Base (AFB). The 319 Air Refueling Wing (ARW) serves as the host unit and maintains its mission as the first core-refueling wing in the Air Mobility Command (AMC). This Environmental Assessment (EA) has been prepared to analyze the potential impacts associated with the action in accordance with the:

- National Environmental Policy Act (NEPA) of 1969, 42 U.S. Code (USC) 4231, et seq., as amended in 1975;
- Council on Environmental Quality (CEQ), 40 Code of Federal Regulations (CFR) §§ 1500-1508; and
- U.S. Air Force (USAF) Environmental Impact Analysis Process (EIAP), 32 CFR § 989.

1.2 Location of Proposed Action

Grand Forks AFB encompasses 4,830 acres of land along U.S. Highway 2 in the central portion of Grand Forks County in eastern North Dakota. The base occupies portions of Mekinock and Blooming townships near the town of Emerado, approximately 15 miles west of the City of Grand Forks (Figure 1-1). The City of Grand Forks is the third largest city in North Dakota, with a population of 45,000 (U.S. Census Bureau 2004a), and is located approximately 75 miles south of the Canadian border. The proposed action would be implemented within the airfield operations area on Grand Forks AFB. The runway is oriented north-south and divides the base into open areas on the west and the main cantonment area on the east.

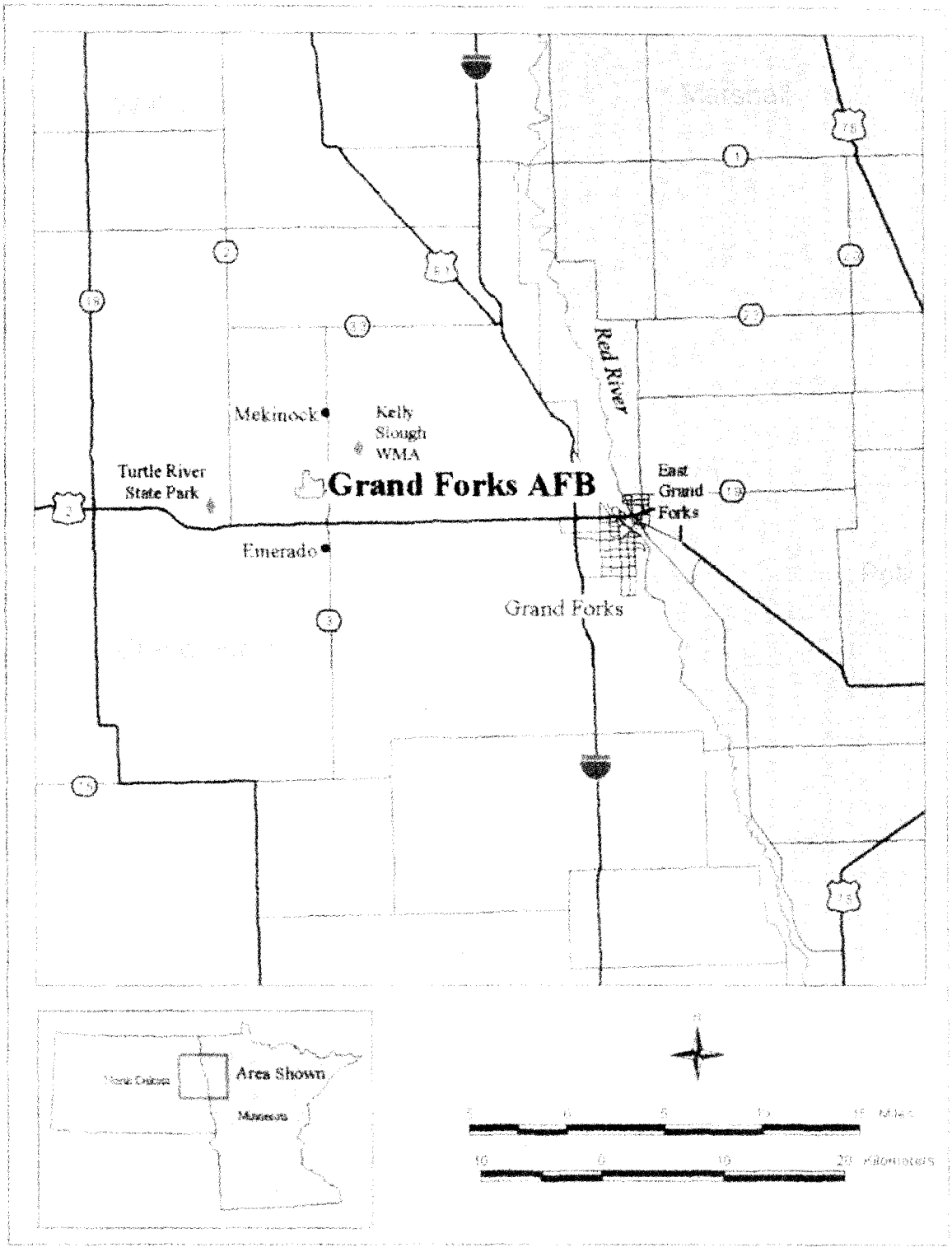
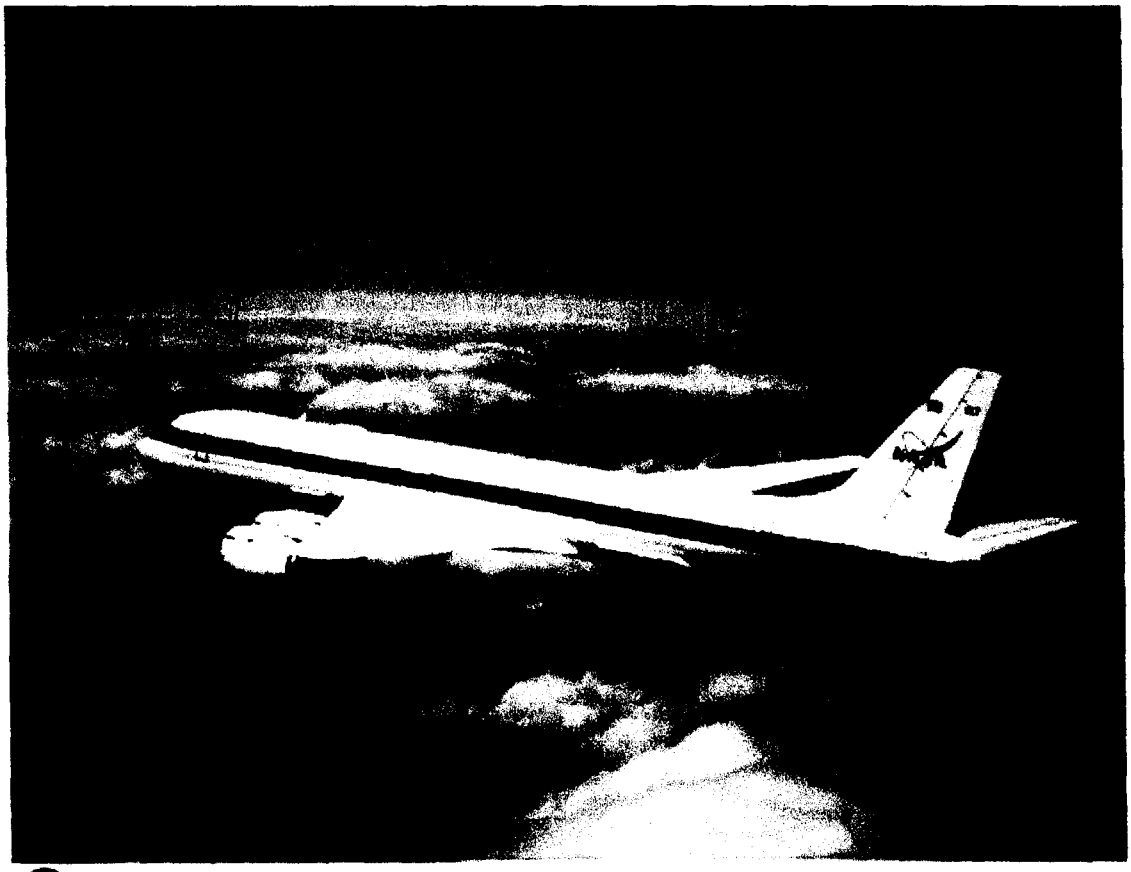


Figure 1-1. Vicinity Map of Grand Forks AFB.

1.3 Purpose and Need for the Action

The purpose of the DC-8 is to support NASA's Earth Science Enterprise. This one-of-a-kind aircraft is currently based at Edwards AFB and is owned/funded/operated by NASA as an atmospheric research aircraft.

NASA has decided to outsource the operating costs of this aircraft to cut expenditures. UND has a very active and growing aerospace research program and desires to operate this aircraft from the Grand Forks area. The local airport from which UND bases their aerospace operations is too small to support the operations of a DC-8, therefore requiring NASA and UND to identify a suitable location to beddown the aircraft.



NASA Dryden Flight Research Center Photo Collection
http://www.dfrc.nasa.gov/Gallery/Photo/index.html
NASA Photo: EC04-0047-06 Date: February 24, 2004 Photo By: Jim Ross

NASA's DC-8 Airborne Science research aircraft, in new colors and markings, in flight Feb. 24, 2004.

Figure 1-2. DC-8 Photo.

1.4 Objectives for the Action

The objectives for the action are to beddown NASA's DC-8 airborne science research aircraft at the Grand Forks AFB. Having this aircraft at the Grand Forks AFB would enable NASA and UND to work together to utilize this highly specialized aircraft to its potential. Successful operation and support of this aircraft's missions results in the accumulation of important data relative to the protection of our atmosphere, environment and ecosystems.

1.5 Scope of the EA

This EA evaluates the potential impacts of hangar modification, beddown, and ongoing support for the beddown of NASA's airborne science research aircraft. Potential impacts to the human and natural environment could be short-term, long-term, or cumulative. The UND and the 319 CES prepared a request for environmental impact analysis (Air Force Form 813 – Appendix A). In addition, project meetings with UND, NASA and Grand Forks AFB personnel, site surveys, and regulatory coordination (Appendix A) were conducted as part of the scoping effort. Consistent with NEPA, a 30-day public review and comment period was conducted August 8, 2004 through September 7, 2004. This comment period was communicated to the public in the Grand Forks Herald for four consecutive Sundays (Appendix A). No comments were received from the public.

Relevant resources evaluated in this EA include air quality, soil resources, water resources, biological resources, cultural resources, noise, socioeconomics, environmental justice, transportation, and environmental programs. Potential impacts to air quality are evaluated against the National Ambient Air Quality Standards (NAAQS). Soil resources would be impacted if the action resulted in decreased land use potential as a result of soil degradation. Water resources would be impacted if the action resulted in a change to the groundwater or surface water quantity or quality. Biological resources would be impacted if the action resulted in reduced viability of native vegetation, wildlife, threatened or endangered species, or wetlands relative to baseline conditions contained in the 2003 update to the Integrated Natural Resources Management Plan (INRMP) for Grand Forks AFB (Grand Forks AFB 2003). Potential impacts to cultural resources would be evaluated using information contained in the 2004 Integrated

Cultural Resources Management Plan (ICRMP) for Grand Forks AFB (AMC 2004). Background noise levels would be impacted if the action changed the noise environment for sensitive receptors. Socioeconomics would be impacted if changes in demographics, employment opportunities, or income potential were negatively affected. Environmental justice impacts to minority and low-income populations would occur if these populations were disproportionately affected compared to other adjacent populations. Transportation resources would be impacted if level of service was substantially decreased or the system reached or exceeded current capacity levels. Potential impacts to environmental programs include health and safety issues, hazardous materials and hazardous waste management, storm water and wastewater management, solid waste management, installation restoration program (IRP) sites, regulated asbestos-containing materials (RACM), and lead-based paint (LBP). The potential environmental effects of the proposed action would be those associated with modification of hangar 600 to accommodate the NASA DC-8 and ongoing support of the NASA DC-8 missions. In addition, the EA examines the cumulative effects of the action when added to past, present, and reasonably foreseeable future projects at Grand Forks AFB.

1.6 Decision to be Made

UND Administration, the Base Civil Engineer and Chairman of the Environmental Protection Committee at Grand Forks AFB would be responsible for deciding whether to issue a Finding of No Significant Impact (FONSI) for the proposed action or alternative, or to prepare an Environmental Impact Statement (EIS). As required by NEPA and its implementing regulations, this EA must precede a final decision on the action to inform decision makers of the potential environmental impacts. The decision would be to either implement the proposed action or to select the no action alternative. The decision will be based on the findings contained in this EA.

1.7 Applicable Regulatory Requirements and Required Coordination

This EA has been prepared in compliance with NEPA; other federal statutes, such as the Endangered Species Act (ESA), Clean Water Act (CWA), Clean Air Act (CAA), and National Historic Preservation Act (NHPA); Executive Orders (EOs); and other applicable state statutes and regulations. In order to implement the proposed action, various federal and state reviews, plans, and permits would be required. Potential permits and environmental protection plans

required by Grand Forks AFB and the State of North Dakota include, but are not limited to, the following:

- Solid waste disposal plan; and
- Notification of demolition and renovation.

1.8 Related NEPA Documents

The USAF prepared an EA in 2003 for the construction of a Fire Station, Air Traffic Control Tower, and RAPCON as well as the demolition of existing facilities at Grand Forks AFB, North Dakota. Based on the review of the EA, the Chairman of the Environmental Protection Committee decided to issue a FONSI and proceeded with the proposed action. The action included construction of three facilities and the demolition of two existing facilities. The current action to beddown NASA's DC-8 airborne science research aircraft at the Grand Forks AFB involves considerably less construction and no demolition activities when compared to the Fire Station/Air Traffic Control Tower/RAPCON action. Only minor modifications to an existing hangar (600) would be necessary to accommodate the aircraft and required research support activities.

Very minimal, if any, environmental controls would need to be implemented relative to the hangar modification or ongoing support of the DC-8 operations. The DC-8 only flies a finite number of research missions each year. This would result in an insignificant increase in the amount of take-offs and landings when compared to normal Grand Forks AFB KC-135 operations. Additionally, any hazardous materials used in the aircraft for research purposes would be in small, laboratory scale quantities only.

2.0 DESCRIPTION OF ALTERNATIVES INCLUDING THE PROPOSED ACTION

2.1 Introduction

This section describes the alternatives that the USAF, UND, and NASA have analyzed to accomplish the action. Section 2.0 presents the proposed action, no action alternative, and identifies the alternatives that have been eliminated. The alternatives eliminated did not fully meet the selection criteria established for the proposed action. Alternatives carried forward for detailed analysis in this EA were identified as meeting the underlying purpose and need for the action. The no action alternative is carried forward for analysis as a baseline to which all other alternatives are compared in accordance with NEPA § 1502.14(d).

2.2 Selection Criteria for Alternatives

In an effort to satisfy the purpose and need for the action, several selection criteria were developed to compare and contrast alternative ways of fulfilling the objectives of the proposed action in accordance with 32 CFR § 989.8(c). Those specific criteria include:

- Beddown of the NASA DC-8 airborne science research aircraft at a facility with adequate runway length to accommodate a fully loaded DC-8.
- Availability of a hangar of adequate size to enclose the NASA DC-8 and also provide the necessary research support facilities such as offices, storage, restrooms, and experiment set-up space.
- Beddown of the NASA DC-8 airborne science research aircraft at a facility in close proximity to UND central aerospace operations in Grand Forks.

2.3 Alternatives Considered but Eliminated from Detailed Study

NASA, UND and the 319 CES considered alternatives for the action, but based on the specific selection criteria, alternatives were limited. Three alternate sites for the beddown of the NASA DC-8 could be identified, the Grand Forks International Airport (GFK), the Minot Air Force Base, and the Minneapolis/St. Paul Airport.

2.3.1 GFK

It is from GFK that UND bases their existing aerospace operations. GFK does not have adequate runway length for a fully loaded DC-8, nor does it have hangar space large enough for a DC-8. Because of these reasons, the GFK alternative was eliminated from further consideration.

2.3.2 Minot Air Force Base

The Minot Air Force Base has runways of adequate length as well as hangars of an adequate size to accommodate the NASA DC-8 airborne science research aircraft. The location of the Minot Air Force Base is approximately 3 hours away from primary UND aerospace research operations. This significant distance would make for many difficulties in experiment preparation, transport of experimental materials, as well as elevated costs of research.

The Minot Air Force Base offers no advantages over the Grand Forks AFB, and considering the difficulties it would present, the alternative was eliminated from further consideration.

2.3.3 Minneapolis/St. Paul Airport

The Minneapolis/St. Paul Airport (MSP) was considered because it is the largest commercial airport in the region, and has adequate runway length to support the NASA DC-8 airborne science research aircraft. It is questionable, however, whether or not hangar space would be available to the extent that it is needed to support the DC-8. Hangars of adequate size do exist at MSP, but they are used for the support of commercial aviation and would not be available for the extended periods needed to support the DC-8.

The location of MSP is approximately 6 hours away from the primary UND aerospace research operations. This significant distance would make for many difficulties in experiment preparation, transport of experimental materials, as well as elevated costs of research.

MSP offers no advantages over the Grand Forks AFB, and considering the difficulties it would present, the alternative was eliminated from further consideration.

2.4 Description of Alternatives

The elimination of the alternatives that did not meet the specific selection criteria makes the action alternatives not viable. Consequently, the EA analysis involves only the proposed action and the no action alternative.

2.4.1 Proposed Action

There are three parts to the proposed action (1) modification of existing hangar 600 to accommodate NASA DC-8 operations, (2) support of NASA DC-8 operations on an on-going basis, (3) implementation of environmental controls during modification and operation support activities for protection of the human and natural environment.

1. Hangar space: The aircraft has a 148 foot wingspan a 42 foot tail height and a length of 157 feet. Typically, project up-loads (in hangar) take from 4 to 6 weeks. Consequently, hangar space is required during this time as experimenters require access to the aircraft from 0700 to 1900 daily, at times 7 days a week. Aircraft power is required to be on during the on-loads. It would be beneficial to operate from the same hangar for all installations if possible. Installation facilities are required to allow workspace for the experimenters to conduct the project on-load. Internet access, phones, work benches, etc. are required to be in close proximity to the aircraft as experimenters program and test their equipment and data systems prior to flight. This activity must be accomplished in the hangar in a secured place.

   Hangar 600 (see figure 2.1) was identified by the 319 ARW as the only option to support the hangar requirement. The hangar's existing doors may need minor modifications to fit the fuselage of the DC-8.

   Modifications to hangar 600 would be necessary to support the operations of the NASA DC-8 airborne science research aircraft. Hangar 600 already has much of the required facilities and infrastructure needed to support the operation of a large aircraft; therefore, modifications would be minimal. Modifications would potentially include upgrades to existing plumbing, electrical, HVAC, phone/network cabling and carpentry work. The modifications would be necessary to support the research experiment set-up and loading processes associated with the DC-8.

   Grand Forks AFB hangar 600 is not an "extra" hangar with regard to the 319 ARW mission. Situations may arise when the 319 ARW needs to utilize the hangar, and therefore bump the DC-8 out of hangar 600. NASA and UND are aware that the potential for these interruptions exists, and accepts the condition.

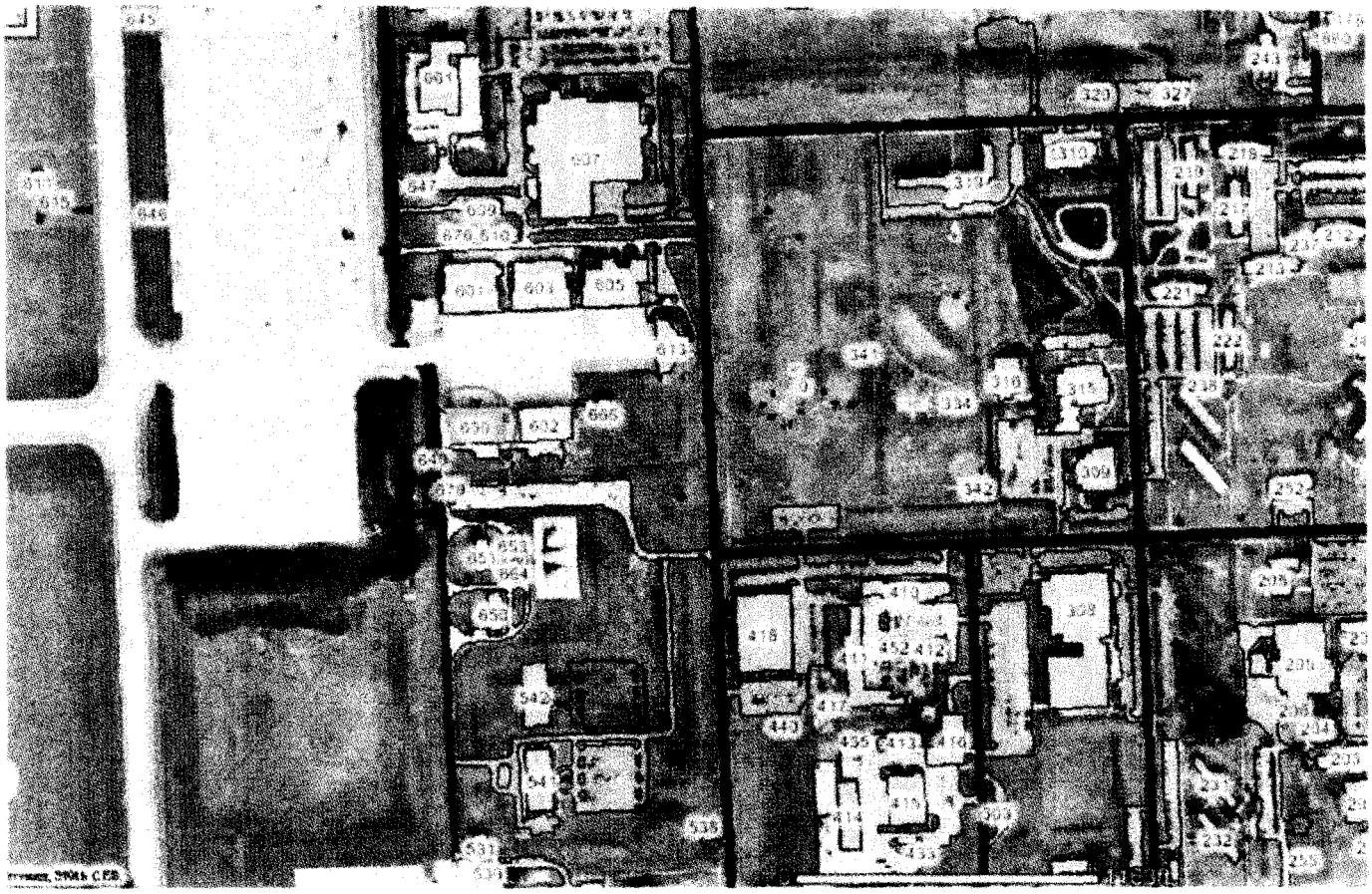


Figure 2-1. Grand Forks AFB Hangar 600

2. Instrumentation suites are loaded onto the aircraft for an average of three NASA missions a year. Additional missions will likely be conducted by UND and other academic, federal, or state research organizations.

   The DC-8 would require approximately 7-8 months per year to be hangared based on the following breakdown:

   - Approximately 2 months for each mission upload, prep, and download.
   - Approximately 1 month for scheduled and unscheduled maintenance.
   - Aircraft must be in the hangar when mission instrumentation is onboard and:

     (a) The temperature is less than 50F

     (b) Icing is forecast

   Facility usage and support agreements will be established between the Grand Forks AFB, UND, and NASA regarding the use of hangar 600, runways, fueling, and maintenance services and any other additional services needed to support the NASA DC-8.

3. All work shall be performed in accordance with applicable federal, state, and local regulations and guidelines, including best management practices (BMPs), to protect the human and natural environment. Hangar modification and support activities would be conducted in accordance with USAF safety regulations and standards prescribed by the Air Force Instruction 91-301, Air Force Occupational Safety and Health. Environmental controls would include, but not be limited to, preconstruction survey report, health and safety plan, pollution prevention plan, storm water protection plan, erosion and sediment control plan, waste disposal plan, and dust control plan. Contractors and support personnel performing the action would be required to submit these plans and specifications to the 319 CES for approval prior to initiating work.

   No storm water protection, erosion or sediment control issues are foreseeable, as no new construction or modification of soil will be conducted. Only minor, and primarily interior, modifications to an existing hangar will be conducted. All other activities with regard to the DC-8 research missions will occur either off-site or in hangar 600.

Compliance with the Grand Forks AFB Hazardous Waste Management Plan and the North Dakota Solid and Hazardous Waste Rules is required to properly accumulate, store, and turn-in hazardous wastes at Grand Forks AFB. UND, NASA, or the agency sponsoring the particular research mission will be responsible for any and all laboratory hazardous wastes generated as a result of the mission. Material identified or proposed for recycling or salvage must be stated in the Waste Disposal Plan. All hazardous materials/waste spills must be reported to the Grand Forks AFB Contracting Officer in accordance with the Spill Control Plan. Noise from hangar modification activities shall be minimized by providing equipment with proper mufflers and ensuring that hangar modification activities are not conducted in early morning or late evening hours. All necessary measures must be taken to minimize the disturbance of any asbestos-containing material (ACM) and to prevent any asbestos fiber release episodes. A Notification of Demolition and Renovation (Form 17987) must be submitted to the North Dakota Department of Health 10 days prior to initiating activities.

Coordination with the 319 CES IRP manager would be conducted to ensure that the proposed action is not in conflict with any Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or Resource Conservation and Recovery Act (RCRA) activities that could place personnel and/or the environment at risk. Although disturbance of cultural resources is not expected as a result of implementing the proposed action, procedures for stopping work in the event that cultural resources might be impacted would be included. Discovery of cultural resources would be reported to the 319 CES natural and cultural resources manager.

2.4.2 No Action Alternative

Although the no action alternative would not fulfill the purpose and need for the action, it is carried forward as a baseline for comparison of potential environmental effects. This alternative would eliminate the planned beddown of the NASA DC-8 airborne research aircraft at Grand Forks AFB. The ability of UND and NASA to partner in the operation of their aerospace research programs would be limited, and the one-of-a-kind DC-8 airborne research aircraft would not be utilized to its full potential.

2.5 Description of Past, Present, and Reasonably Foreseeable Future Actions Relevant to Cumulative Impacts

This EA identifies actions referenced in the Grand Forks AFB 2001 General Plan (Grand Forks AFB 2001b) that have been conducted in the past, are ongoing or in the planning stages, and are proposed future actions that may be related to the proposed action. These actions are included in the cumulative impacts section to the extent that details regarding such actions exist and that the actions have the potential to interact with the proposed action. Separate NEPA documentation either has been prepared or will be prepared for the past, present, and reasonably foreseeable future actions.

2.6 Comparison of Alternatives

Table 2-1 summarizes the potential impacts of implementing the proposed action or selecting the no action alternative based on discussions with 319 CES personnel, review of Air Force Form 813 for this action, site surveys, and comparisons with similar military activities.

2.7 Identification of Preferred Alternative

The proposed action is the preferred alternative. It fulfills the selection criteria and is necessary to achieve the purpose and need for the action. The consequences of taking no action would prevent the ability of UND to operate the NASA airborne science research aircraft from a location near Grand Forks, ND and would limit the potential partnership between NASA and UND with regard to atmospheric research. The no action alternative would result in no change in activities for the Grand Forks AFB.

Table 2-1. Comparison of Alternatives.

Resource/Issue	No Action	Proposed Action
Air Quality	No change	Potential short-term increase in emissions of fugitive dust and particulate matter; emissions would be below *de minimis* levels; no long-term effect
Soils	No change	No impact expected as no excavation or other work will be done to affect soils.
Water Resources	No change	No impact expected as no new construction, hard surfacing or other site work will be conducted.
Biological Resources	No change	No regional or local effect on native vegetation and wildlife; no effect on threatened and endangered species; no loss of wetland;
Cultural Resources	No change	No impact expected as no new construction will be conducted.
Noise	No change	No long-term or major change to the noise environment; no sensitive receptors close to the project area to be affected by noise related to proposed action. Minimal increase in the number of take-off's and landings.
Socioeconomics	No change	Potential long-term, minor benefits to income and employment in the ROI; small increase in population.
Environmental Justice	No change	No effect on minority populations and low-income populations or protection of children from environmental health risks and safety risks
Transportation	No change	Potential short-term, negative effect to the base transportation system from additional vehicle traffic during hangar modification and project up-load times; no long-term effects
Environmental Programs	No change	Potential short-term negative effect if hazardous materials were spilled/released during research up-load and preparation activities; short-term increase in requirements for hazardous materials and waste management; no effect to storm water and wastewater management; short-term increase in requirements for solid waste management; no effect on IRP sites; potential short-term increase in requirements for RACM management and long-term benefit from removal of asbestos; potential short-term, minor increase in management requirements for LBP removal and long-term benefits from removal of LBP

3.0 AFFECTED ENVIRONMENT

3.1 Introduction

This section describes the relevant environmental conditions at Grand Forks AFB for resources that would be potentially affected by implementation of the proposed action and no action alternative described in Section 2.0. Although the region of influence (ROI) or the expected geographic scope of potential impacts includes all of Grand Forks AFB, the only significant impact would occur in the immediate vicinity of hangar number 600. In compliance with guidelines contained in NEPA, the CEQ regulations, and AFI 32-7061, the description of the affected environment focuses on those resources potentially subject to impacts.

3.2 Air Quality

3.2.1 Regulatory Requirements

The CAA (42 USC § 7401, et seq., as amended) requires the EPA to set NAAQS for pollutants considered harmful to public health and the environment. The CAA established two types of national air quality standards. Primary standards set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings.

The EPA Office of Air Quality Planning and Standards has set NAAQS for six principal pollutants, which are called "criteria" pollutants. These are ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), lead (Pb), and particulate matter less than 10 microns in diameter (PM_{10}) and less than 2.5 microns in diameter ($PM_{2.5}$). Most O_3 is a result of volatile organic compounds (VOC) and nitrogen oxides (NO_X) reacting with sunlight. Units of measure for the standards are parts per million (ppm) by volume, milligrams per cubic meter of air (mg/m^3), and micrograms per cubic meter of air ($\mu g/m^3$). Areas not meeting NAAQS are designated as nonattainment areas for specified pollutants.

The North Dakota Air Quality Standards (Title 33) sets air quality standards and the North Dakota Hazardous Air Pollutants (HAP) Emission Standards (Title 33) establishes standards for hazardous air pollutants for the state. Provisions for the control of air pollution in the state are provided in the North Dakota Air Pollution Control Act (Title 23). The North Dakota Ambient

Air Quality Standards (NDAAQS) are more stringent than the federal NAAQS. In addition to the six NAAQS, North Dakota also has standards for hydrogen sulfide (H_2S). Table 3-1 presents the NAAQS and NDAAQS for criteria pollutants.

Table 3-1. National and North Dakota Ambient Air Quality Standards.

Pollutant	NAAQS Primary[a]	NAAQS Secondary[a]	NDAAQS
Pb Quarterly Average	1.5 $\mu g/m^3$	1.5 $\mu g/m^3$	1.5 $\mu g/m^3$
PM_{10} Annual Arithmetic Mean	50.0 $\mu g/m^3$	50.0 $\mu g/m^3$	50.0 $\mu g/m^3$
PM_{10} 24-Hour Average	150.0 $\mu g/m^3$	150.0 $\mu g/m^3$	150.0 $\mu g/m^3$
SO_2 Annual Arithmetic Average	0.03 ppm	No Standard	0.023 ppm
SO_2 24-Hour Average	0.14 ppm	No Standard	0.099 ppm
CO 1-Hour Average	35.0 ppm	No Standard	35.0 ppm
CO 8-Hour Average	9.0 ppm	No Standard	9.0 ppm
O_3 1-Hour Average	0.12 ppm	0.12 ppm	0.12 ppm
NO_2 Annual Arithmetic Mean	0.053 ppm	No Standard	0.053 ppm
H_2S 1-Hour Average	No Standard	No Standard	0.20 ppm
H_2S Annual Arithmetic Mean	No Standard	No Standard	10.0 ppm

[a]Source: 40 CFR; NDAC 33-15

3.2.2 Existing Conditions

Grand Forks AFB is located in EPA Air Quality Control Region VIII. Prevention of significant deterioration (PSD) regulations (40 CFR § 52.21) establishes air quality levels that cannot be exceeded by major stationary emission sources in specified geographic areas. Grand Forks AFB is located in a PSD Class II area, which means that the addition of a major source or a significant increase in emissions from stationary sources would be subject to limits under PSD regulations. A significant increase in emissions would include 100 tons per year (tpy) of CO; 40 tpy of NO_x, VOCs, or SO_x; or 15 tpy of PM_{10}. These limits do not include emissions from mobile sources during construction of facilities.

An air emissions survey, conducted for Grand Forks AFB in 2001, found only minor levels of HAPs generated on base and actual emissions below PSD air quality levels (USAF 2002). Data from the North Dakota Department of Health (NDDH) air quality monitoring survey found that the ambient quality in North Dakota is generally good. The entire North Dakota Air Quality Control Region (including Grand Forks County) is in attainment for all criteria pollutants. The emissions inventory from the NDDH Title V Permit for Grand Forks AFB is presented in Table 3-2. Grand Forks AFB is a major stationary source, as the potential to emit for NO_x and CO is more than 100 tpy.

Table 3-2. Air Pollutant Emissions (tpy) for 2001 at Grand Forks AFB.

Emissions	PM_{10}	NO_x	SO_x	CO	VOC	HAP
Actual Stationary Sources	1.4	29.8	1.4	12.7	18.8	2.2
Potential to Emit	33.3	422.0	31.6	132.0	77.0	6.6

Source: USAF 2002

3.3 Environmental Management - Pollution Prevention and Geology and Soils

Prevention, management, and abatement of environmental pollution are accomplished at Grand Forks AFB in accordance with DoD Directive 4210.15 (Hazardous Materials Pollution Prevention), AFI 32-7086 (Hazardous Materials Management), and AFI 32-7080 (Pollution Prevention Program). These implementing regulations are incorporated in the Pollution Prevention Management Action Plan for Grand Forks AFB.

Grand Forks AFB is in the Central Lowlands physiographic province and the Red River Valley physiographic subregion. The soils at Grand Forks AFB formed in glaciolacustrine deposits overlaying glacial till. The depth to underlying rock strata ranges from several hundred feet to more than 2,000 feet in Grand Forks County. There are six soil associations at Grand Forks AFB (Doolittle et al. 1981). Most of the soil associations are used extensively for cultivated crops; however, the Ojata association is generally unsuitable due to strong salinity. A seasonally high water table occurs throughout most of the region at depths ranging from 2 to 6 feet below the surface. The proposed activities will utilize preexisting facilities, and will not impact the geology or soils at the AFB.

3.4 Water Resources

Grand Forks AFB is located in the 30,100-square-mile Red River Basin, of which 90 percent is used for agriculture. The Red River is approximately 16 miles east of Grand Forks AFB and drains nearly 28 percent of North Dakota. The Turtle River Watershed includes Grand Forks AFB and drains 311 square miles to the Red River. Groundwater in Grand Forks County occurs in unconsolidated glacial drift aquifers and in the underlying glacial deposits. The sewage treatment lagoons east of the main base represent the only surface water impoundments on Grand Forks AFB. The Red River Basin contains thousands of natural wetlands and prairie potholes; wetlands on Grand Forks AFB are primarily associated with drainages (Grand Forks AFB 2003). Potable water for Grand Forks AFB is obtained from the City of Grand Forks and Lake Agassiz Water Users Incorporated (Grand Forks AFB 2001b).

3.4.1 Groundwater

Grand Forks County has five major and several minor glacial drift aquifers. The Emerado Aquifer is a major glacial drift aquifer underlying Grand Forks AFB approximately 50 to 75 feet below ground surface; the remaining aquifers are from 5 to 15 miles from Grand Forks AFB. The recharge area for the major glacial drift aquifers is 10 to 20 square miles and 3 to 4 square miles for the minor aquifers. Water quality in the Emerado Aquifer is considered unsuitable for municipal use due to upward leakage of high-salinity from the underlying bedrock aquifers (North Dakota Geological Survey 1970).

3.4.2 Surface Water

The CWA (33 USC § 1251, et seq.) and National Pollutant Discharge Elimination System (NPDES) permit establish federal limits on discharge of pollutants to surface waters. Four main storm water ditches collect drainage from Grand Forks AFB and discharge eastward to Kellys Slough or northward to Turtle River under an approved NPDES permit. Kellys Slough is approximately 2 miles east of Grand Forks AFB. The Turtle River originates approximately 10 miles west of Grand Forks AFB and its northeastward flow to the Red River crosses the northwestern corner of the base. The NDDH designated the Turtle River as a Class II stream, suitable for municipal use, irrigation, fish production, boating, swimming, and other water-based recreation.

3.4.3 Wetlands and Floodplains

Section 404 of the CWA, EO 11990, and EO 11988 protect wetlands and floodplains from dredge and fill activities, direct and indirect impact to wetlands, and construction in floodplains. AFI 32-7064 provides guidance for no net loss of wetlands on USAF installations.

Approximately 24 acres of wetlands were delineated on Grand Forks AFB (Grand Forks AFB 2000). Most of the wetland polygons were less than one acre in size. The Federal Emergency Management Agency designated 250 feet on either side of the Turtle River, approximately 46 acres on Grand Forks AFB, as regulatory floodplains (Grand Forks AFB 2001b).

3.5 Biological Resources

Grand Forks AFB is in the Bluestem Prairie region of the Northern Great Plains physiographic region (Grand Forks AFB 2003). This tallgrass prairie community originally covered eastern North Dakota southward to South Dakota and Nebraska. The physiographic region and land management practices have influenced the occurrence of vegetation, wildlife, and threatened and endangered species.

3.5.1 Vegetation

Prior to land acquisition for development of Grand Forks AFB in 1956 by the DoD, the land was intensively cultivated for agricultural production. Many of the unimproved areas remain in cultivation under agricultural outleases for hay. There are no known remnants of the tallgrass prairie on Grand Forks AFB. When the initial construction of the base was completed in the 1950s, smooth brome (*Bromis inermis*) and Kentucky bluegrass (*Poa pratensis*) were planted in the developed areas. Leafy spurge (*Euphorbia esula*) and Russian thistle (*Salsola tragus*) are noxious weeds that are common in some areas. The dominant trees on Grand Forks AFB are elm (*Ulmus americana*), eastern cottonwood (*Populus deltoids*), and green ash (*Fraximus pennsylvanica lanceolata*). Understory vegetation includes the highly invasive and exotic species European buckthorn (*Rhamnus cathartica*) and Russian olive (*Elaeagnus angustifolia*), common chokecherry (*Prunus virginiana*), and wood rose (*Rosa woodsii*). Common forbs include wood nettle (*Laportea canadensis*), stinging nettle (*Urtica dioica*), and beggar ticks (*Bidens frondosa*) (Grand Forks AFB 2003).

3.5.2 Wildlife

Due to the historic agricultural development and the extensive development of military facilities on Grand Forks AFB, the predominant wildlife habitat is for grassland birds and neotropical migrants (Grand Forks Air Force Base 2001c). Ten species of birds were identified in 2001 on the installation that have priority status in the Partners in Flight program. There are abundant wildlife habitats and wildlife populations on Kellys Slough National Wildlife Refuge (3 miles northeast of Grand Forks AFB) and Turtle Creek State Park (5 miles west of Grand Forks AFB). Nuisance wildlife species on Grand Forks AFB include Richardson's ground squirrel (*Spermophilus richardsonii*) and whitetail jackrabbit (*Lepus townsendi*).

3.5.3 Threatened and Endangered Species

The ESA (16 USC §§ 1531-1543, et seq.) requires federal agencies that authorize, fund, or conduct actions to avoid jeopardizing the continued existence of threatened or endangered species and to avoid destroying or adversely modifying their critical habitat. There are no federal or state threatened or endangered species known to occur on Grand Forks AFB. However, the migratory whooping crane (*Grus americana*) and the gray wolf (*Canis lupus*), federal endangered species, and the recently delisted peregrine falcon (*Falco peregrinus anatum*) have been sighted in Grand Forks County (Grand Forks AFB 2003). Potentially occurring threatened species include piping plover (*Charadrius melodus*) and bald eagle (*Haliaeetus leucocephalus*). There are no significant habitats for these species on Grand Forks AFB. Grand Forks AFB has a population of Yellow Lady Slipper Orchids inside the airfield security fenced area. Yellow Lady Slippers are ranked as S2S3 in North Dakota meaning that they are imperiled in the state because of rarity. This population was documented June 2004 while doing a biological inventory update.

3.6 Cultural Resources

Cultural resources consist of prehistoric and historic districts, sites, structures, artifacts, or any other physical evidence of human activities considered important to a culture, subculture, or community for scientific, traditional, religious, or other reasons. Cultural resources can be divided into three major categories: archeological resources (prehistoric and historic), architectural resources, and traditional cultural resources. Archeological resources are locations and objects from past human activities. Architectural resources are those standing structures that

are usually over 50 years of age and are of significant historic or aesthetic importance. In addition, some recent structures may warrant protection and study if they have potential historic significance. Traditional cultural resources may include archeological sites, buildings, prominent topographic features, objects, habitats, plants, animals, and minerals that hold importance or significance to Native Americans or other ethnic groups in the persistence of traditional culture.

The significance of such resources relative to the Native American Graves Protection and Repatriation Act and/or eligibility for inclusion in the National Register of Historic Places (NRHP) is considered part of the EA process. The process generally relies on the regulations and procedures set forth in 36 CFR 800, which implements Sections 110 and 106 of the NHPA, as amended. Under Section 110 of the NHPA, federal agencies are required to identify all cultural resources within their landholdings that are eligible for inclusion in the NRHP. Section 106 requires federal agencies with jurisdiction over a federal or federally assisted or federally licensed undertaking to consider the effects of that undertaking on properties on, or eligible for inclusion in, the NRHP.

3.6.1 Archeological Resources

The 2003 ICRMP developed for Grand Forks AFB includes a synopsis of previous cultural resources surveys and architectural inventories conducted, and outlines and assigns responsibilities for the management and preservation of cultural resources at the base (AMC 2003). The ICRMP indicates that Grand Forks AFB has completed its inventory and identification of archeological resources under Section 110 of the NHPA and that no new inventory efforts are needed.

Two archeological surveys have been conducted at Grand Forks AFB. In 1989, a survey of 235 acres was conducted, identifying two archeological sites and three isolated finds (Artz 1989). In 1995-1996, an intensive (Class III) archeological survey was conducted of 740 acres of the base (AMC 1996a). Four sites and three isolated finds were identified. The four archeological sites were farmsteads dating from 1890 to 1955. One of the farmsteads contained a single prehistoric flake. The isolated finds consist of low density prehistoric and historic artifact locations. None of the six sites and six isolated finds was found eligible for the NRHP. A potential for deeply buried archeological sites has been identified within the terraces of the Turtle River.

3.6.2 Historic Architectural Resources

Historic architectural surveys have been completed for Grand Forks AFB. One building under the jurisdiction of the AMC, Building 714, is eligible for inclusion on the NRHP for its association with the Cold War. The USAF determined that Buildings 606, 703, 704, 705, 706, and 707 were not eligible for listing on the NRHP (AMC 1996b). However, the State Historical Society of North Dakota (SHSND), which serves as the State Historic Preservation Office (SHPO), did not concur. Designation of these sites for management purposes is pending agreement between the USAF and the SHSND, or pending a decision by the Keeper of the National Register (Table 3-3; AMC 2003).

Building 600 is the only building that will be impacted by the mission, and its use as an airplane hangar will not change. Current use of the hangar has been screened with the State Historic Preservation Office. There is no potential for Building 600 to be listed on the NRHP. Therefore, this resource area has been eliminated from further study in this EA.

Table 3-3. National Register or Potentially Eligible Resources at Grand Forks AFB.

Building No.	Original Use	Year Built
606	Minuteman II/III Transfer Building, Hot Cargo Area	1965
703	Missile Storage Igloo, MB-1 Genie Compound	1957-59
704	Missile Storage Igloo, MB-1 Genie Compound	1957-59
705	Missile Storage Igloo, MB-1 Genie Compound	1957-59
706	Missile Storage Igloo, MB-1 Genie Compound	1957-59
707	Missile Storage Igloo, MB-1 Genie Compound	1957-59
714	SAC Surveillance and Inspection Shop	1958-59 and 1969-72

3.6.3 Traditional Cultural Properties

Grand Forks AFB has not identified any Native American sacred sites or properties of traditional religious and cultural importance on the base. As part of the Environmental Assessment for the new fire station and Control Tower, the base sent a letter to Native American groups in April 2003 requesting information on their traditional sites on Grand Forks AFB; no responses were received.

3.7 Land Use

Land use in the vicinity of Grand Forks AFB is defined in terms of commercial, residential, agricultural, and industrial uses. The City of Emerado is the only developed area in the immediate vicinity; the residential area is located 2 miles south of the main gate. The land use outside this locality is primarily agricultural. Development in Grand Forks County is reviewed by the Grand Forks County Planning and Zoning Commission to ensure conformity with the county's zoning and subdivision regulations and site design standards. Grand Forks AFB was established in 1956 as an Air Defense Command base. The primary mission is currently air refueling and the land use on Grand Forks AFB is dedicated to airfield operations and facilities support. No land uses in the local vicinity are incompatible with the military mission at Grand Forks AFB (Grand Forks AFB 2001b). Implementation of the proposed action would not impact land use. Therefore, this resource area has been eliminated from further study in this EA.

3.8 Airspace/Airfield Operations

The FAA has primary jurisdiction over the management of airspace and airfield operations. The FAA defines airspace geographically through a public rulemaking process and classifies it based upon whether the FAA provides ATC separation within it or not. The FAA designates special use airspace when it removes a volume of airspace from the public domain, excluding other users and allocating it for the benefit of a particular category of user, such as the military. Implementation of the proposed action would increase flights from the Air Force Base by less than 1 percent. From an environmental perspective, it would not significantly impact airspace/airfield operations at Grand Forks AFB. Therefore, this resource area has been eliminated from further study in this EA.

3.9 Noise

Federal agencies must comply with the Noise Control Act of 1972 (42 USC § 4901, et seq.), which establishes a policy to promote an environment free from noise harmful to the health and welfare of people. The range of ambient noise in the United States varies up to 50 decibels A-weighted (dBA) based on a number of different factors (USEPA 1974). Some of the factors are distance from major thoroughfares and airports, population density, and time of day. Noise is

any unwanted sound that disrupts normal activities or otherwise reduces the quality of the environment. It ranges from the threshold of human hearing at 10 dBA to 80 dBA where most residents would be annoyed. Ground-generated noise attenuates approximately 6 dB for every doubling of distance from the noise source. There are no sensitive noise receptors (e.g., residential areas, hospitals, churches) within 4,000 feet of the project areas.

The primary source of noise on Grand Forks AFB is from fixed-wing aircraft operations. Other sources include vehicular traffic and construction activities. The number of daily aircraft operations directly affects the level of noise at Grand Forks AFB. The USAF developed the Air Installation Compatible Use Zone (AICUZ) Program (AFI 32-7063) to protect USAF installations from incompatible land use and to assist local, state, and federal officials in protecting and promoting public health, safety, and welfare by providing information on aircraft accident potential and noise.

The noise levels, time of flights and flight patterns of the DC-8 would be similar to the current operations at Grand Forks AFB. This alternative would be consistent with the Grand Forks AFB AICUZ. The slight increase in air and ground traffic from this alternative would not increase noise intensity at sensitive receptors. Subsequently, the impact from noise associated with this alternative would be insignificant.

3.10 Socioeconomics

Socioeconomic analyses generally include detailed investigations of the prevailing population, income, employment, and housing conditions of a community or area of interest. The ROI for this analysis is Grand Forks County, and the socioeconomic conditions in the ROI could be affected by changes in the rate of population growth, demographic characteristics, or employment. In addition to these characteristics, populations of special concern, as addressed by EO 12898, are identified and analyzed for environmental justice impacts. The local housing market, schools, community services, and infrastructure will not be evaluated since personnel changes associated with the proposed action will be insignificant.

3.10.1 Population

Grand Forks County had a 3.2 percent decrease in population from the 1990 level to a population of 66,109 in 2000. The median age was 29.2 years. The City of Grand Forks had a 2000 census

population of 49,321, which was a 0.5 percent decrease from the 1990 figures. The countywide population declined during this period primarily as a result of a major flood that occurred in 1997 in the City of Grand Forks. Grand Forks County had 10.3 percent of the total population in North Dakota; the state population grew by 0.5 percent between 1990 and 2000 (U.S. Census Bureau 2004a). Approximately 1,213 individuals live on Grand Forks AFB in 1,489 family housing units and 649 dormitories provided for members and their families (Grand Forks AFB 2001a).

3.10.2 Income and Employment

Total personal income for 2001 in Grand Forks County was $1.69 billion and per capita income was $26,031 (Bureau of Economic Analysis [BEA] 2004). Grand Forks AFB is the third–largest employer in Grand Forks County with approximately 2,750 active duty military employees and 1,515 civilian employees in 2001, or approximately 9 percent of the total employment in Grand Forks County. The total annual payroll for Grand Forks AFB for 2001 was approximately $84 million, with other expenditures for supplies and services contributing another $87 million to the regional economy. Approximately 1,450 indirect jobs were created from the base presence with an estimated annual value of $39 million. The total contribution to the regional economy was $201 million, representing 12.6 percent of the total income in Grand Forks County (Grand Forks AFB 2001a).

In 2000, Grand Forks County had a labor force of 37,211 from a population 16 years and older of 52,229 (U.S. Census Bureau 2004a). The civilian labor force was 34,958 (94 percent) and the armed forces labor force was 2,253 (6 percent). Management, professional, and related occupations; service occupations; and sales and office occupations accounted for 78 percent of the employed civilian population. Farming, fishing, and other occupations; construction, extraction, and maintenance occupations; and production, transportation, and material-moving occupations accounted for the remainder. Average monthly unemployment in Grand Forks County was 3.5 percent in January 2003 and 4.3 percent in January 2002 (North Dakota Job Service [NDJS] 2004). The unemployment rate for North Dakota was 3.5 percent in 2003 and 3.7 percent in 2002. The average unemployment rate for the United States was 5.7 percent in 2003 and 5.6 percent in 2002 (U.S. Census Bureau 2004a).

3.11 Environmental Justice

Environmental justice evaluation looks at the distribution of race and poverty status in areas potentially impacted by implementation of the proposed action. The ROI for environmental justice evaluation is the same as for socioeconomic resources, Grand Forks County.

EO 12898 (Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, February 1994) requires each federal agency to "make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high human health or environmental effects of its programs, policies, and activities on minority populations and low income populations." According to the CEQ (1997), a minority population can be described as being composed of the following population groups: American Indian or Alaskan Native, Asian or Pacific Islander, Black, not of Hispanic origin, or Hispanic, and exceeding 50 percent of the population in an area or the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population.

The U.S. Census Bureau defines the national poverty thresholds, which are measured in terms of household income dependent upon the number of persons within the household. Individuals falling below the poverty threshold ($17,524 for a household of four in 2000) are considered low-income individuals. Census tracts where at least 20 percent of the residents are considered poor are known as poverty areas (U.S. Census Bureau 2004b). When the percentage of residents considered poor is greater than 40 percent, the census tract becomes an extreme poverty area.

The 2000 census of Grand Forks County was 93 percent White, 2.3 percent Native American or Alaska Native, 1.4 percent Black or African-American, 1.0 percent Asian, and 2.3 percent other. Persons of Hispanic origin comprised 2.1 percent of the county population. These data were similar to the statewide data for 2000. Approximately 12.3 percent of individuals were below the poverty level; the statewide average for 2000 was 11.9 percent and 11.3 percent in the United States (U.S. Census Bureau 2004a).

There are very few residences and no concentrations of low-income or minority populations near the boundaries of Grand Forks AFB (Grand Forks AFB 2001b).

3.12 Transportation

Traffic and circulation refer to the roadway system, including pedestrian walkways and sidewalks, which enable persons and goods to move about a given area. The primary concerns for the transportation resource pertain to the capacity and efficiency of the roadway access and circulation system. The Hazardous Materials Transportation Act of 1975 (49 USC § 1761, et seq.) provides for the protection of public health from the risks of transporting hazardous materials (explosives, flammable liquids and solids, combustible materials, corrosives, and compressed gases). The transportation of all hazardous materials used for the action must meet the requirements of this act.

The number of vehicles that can pass over a given section of roadway during a specified period generally measures roadway capacity. This capacity is usually considered in terms of levels of service, which represents different levels of congestion. It is a qualitative measure describing operational conditions within a traffic stream; it is described in terms of speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety.

The existing roadway systems in Grand Forks County provide ready access to Interstate 29 and the regional highway systems. The roadways in the immediate area adjacent to Grand Forks AFB are capable of accommodating the existing traffic (Grand Forks AFB 2001b). The traffic on base is characterized as slight except for rush hour in the morning and afternoon. There are two entrances to the base. The primary entrance is the main gate, which handles most off-base traffic and provides access to Steen Boulevard, the primary east-west roadway. The South Gate, a secondary entrance on the southern edge of the base used primarily for contractor access, connects U.S. Highway 2 to Eielson Street and is open 12 hours a day (Monday through Friday, 0600–1800).

Steen Boulevard acts as the center spine of the base roadway system. It begins at the main base entrance on County Highway B-3 and terminates at the air operations area. The second of four primary intersections along Steen Boulevard are for accessing family housing, the third intersection accesses Holzapple Street for commercial areas, and the fourth intersection accesses Eielson Street for flight line operations. Eielson Street is the longest single road at Grand Forks AFB, spanning the main base north to south, crossing Steen Boulevard. North Eielson Street

provides access to the northern end of the flight line, while South Eielson Street is the connection to the southern end of the flight line area and the base industrial area (Grand Forks AFB 2001b).

3.13 Environmental Programs

The RCRA of 1976 (42 USC § 6901, et seq.) establishes the requirements for reduction, control, management, and disposal of solid and hazardous waste. The CERCLA of 1980, as amended by the Superfund Amendments and Reauthorization Act (SARA) (42 USC § 9601, et seq.) provides for funding, enforcement, response, and liability for the release or threatened release of hazardous substances into the environment. The Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986 (42 USC § 11001, et seq.) provides requirements for emergency planning, including timely notification and response to a release of hazardous substances. The Occupational Safety and Health Act (OSHA) of 1970 (29 USC § 651, et seq.) provides regulations to protect the health and safety of employees in the workplace. AFI 32-7042, Solid and Hazardous Waste Compliance, provides guidance on compliance with RCRA and applicable federal, state, and local regulations. The IRP is designed to identify, confirm, quantify, and remediate suspected problems associated with past hazardous material disposal sites on military installations. The Defense Environmental Restoration Program (10 USC § 2701, et seq.) is the legal mandate for the IRP. AFI 32-7020, Environmental Restoration Program, provides guidance on compliance with CERCLA and federal, state, and local regulations. These laws and regulations represent the regulatory constraints for the proposed action.

The environmental office (319 CES/CEV) manages the environmental programs in accordance with all applicable federal, state, local, DoD, and USAF regulations, standards, and laws that apply to Grand Forks AFB.

The Safety and Environmental Health Office at the University of North Dakota (UND) manages the safe handling, use, storage, and disposal of hazardous chemicals used in research and laboratory settings in compliance with federal, state, and local regulations, standards, and laws. UND will be responsible for the hazardous material used in laboratory and research activities in the hangar and on the aircraft.

3.13.1 Health and Safety

Health and safety issues relevant to the proposed action include hazardous chemical materials storage and worker occupational health and safety. The areas of concern for worker health and safety are the areas of chemical use in the hangar and on the aircraft, and the defined clear zones and the imaginary surfaces associated with airfield runways defined under 14 CFR 77 (Federal Aviation Regulations – Objects Affecting Navigable Airspace). Permissible uses, structure heights, and construction material in these areas are prescribed to protect both the safety of the aircrews and the safety of persons and property on the airfield.

3.13.2 Wastes, Hazardous Materials and Stored Fuels

Hazardous materials include, but are not limited to, hazardous substances, hazardous wastes, or any materials that pose a potential hazard to human health and safety or the environment due to their quantity, concentration, or physical and chemical properties. Hazardous wastes are products characterized by their ignitability, corrosiveness, reactivity, and toxicity. Hazardous waste includes any waste which, due to its quantity, concentration, or physical/chemical/infectious characteristics, may either (1) cause or significantly contribute to an increase in mortality, serious irreversible illness, or incapacitating reversible illness; or (2) pose a substantial threat to human health or the environment.

Hazardous materials from flight operations and aircraft maintenance (e.g., petroleum fuels, flammable solvents, paints, corrosives, pesticides, cleaners) are used and managed through the hazardous materials pharmacy program (HAZMART). Grand Forks AFB is classified as a small quantity hazardous waste generator (greater than 100 kilograms (kg) but less than 1,000 kg per month). Grand Forks AFB does not maintain a permitted hazardous waste storage facility. All wastes are stored in containers and may be accumulated for up to 180 days at the central accumulation site located at Base Supply (Building 408). The Grand Forks AFB Hazardous Waste Management Plan (Plan 7042) assigns organizational responsibilities for the handling of hazardous waste (Grand Forks AFB 2001b).

Above ground and underground storage tanks are used for storage of fuel products at Grand Forks AFB. Two above ground storage tanks, with a total capacity of 840,000 gallons, supply jet fuel to the aircraft hydrant fuel system on the flight line. Additional hydrant fuel storage tanks have a combined capacity of 2.3 million gallons. A backup hydrant system has 8 underground

storage tanks with a combined capacity of 800,000 gallons. Regulated underground storage tanks are included in a monthly Leak Detection Monitoring Program in compliance with the North Dakota Underground Storage Tank Program (Grand Forks AFB 2001b).

The Safety and Environmental Health Office at UND will manage hazardous chemicals used in research. Hazardous materials used in research activities that are no longer needed for the DC-8 missions will be transported to the University's Chemical Storage Building (Building 186) by UND or DC-8 research staff in compliance with US Department of Transportation regulations. UND Safety and Environmental Health staff will evaluate the hazardous material in Building 186 to determine if it is hazardous waste. UND is classified as a small quantity hazardous waste generator (greater than 100 kilograms (kg) but less than 1,000 kg per month). UND does not maintain a permitted hazardous waste storage facility. Waste may be accumulated at building 186 for up to 180 days.

3.13.3 Storm Water and Wastewater Management

Industrial storm water discharges associated with industrial activity to waters of the United States must be authorized by an NPDES permit (CWA § 402). Grand Forks AFB discharges storm water directly into Turtle River and Kellys Slough under an approved permit from the NDDH. The 319 Bioenvironmental Engineering Flight samples the storm water outfalls monthly during the months that aircraft are de-iced. Construction projects that disturb 1.0 or more acres are required to obtain a construction permit from the NDDH and use BMPs to control erosion and sedimentation.

3.13.4 Solid Waste Management

Grand Forks AFB has a mandatory recycling program to facilitate management of non-hazardous solid waste from military family housing, dormitories, industrial shops, offices, tenants, and contractors. Grand Forks AFB has a Qualified Recycling Program (Grand Forks AFB 2001b) managing a monthly average of 260 tons of waste; 120,000 tons of construction/demolition debris were diverted for reuse and recycling in 2000. Construction debris, hardfill, and inert waste generated at Grand Forks AFB are disposed of at the Grand Forks Municipal Landfill, approximately 12 miles from the base.

3.13.5 Installation Restoration Program

The IRP was initiated in 1984 when a Phase I records search identified three potential hazardous waste or hazardous substance sites. Three additional sites were added to the list in 1991. The last IRP site was added in 1995. These sites include the Fire Training Area/Old Sanitary Landfill Area; New Sanitary Landfill Area; Building 306; Explosive Ordnance Detonation Area; Refueling Ramps and Pads; Base Tanks; and Petroleum, Oil, and Lubricant Off-loading Area. There are five sites that are in long-term monitoring/long-term operation. They are FT-02 (Fire Training Area/Old Sanitary Landfill Area), LF-03 (New Sanitary Landfill Area), ST-07 (Petroleum, Oil, and Lubricant Off-Loading Area), ST-04 (Building 306), and ST-08 (Refueling Ramps and Pads). Grand Forks AFB is not on the EPA's National Priority List for site cleanup (Grand Forks AFB 2003).

3.13.6 Asbestos

A base-wide asbestos survey was completed in 1994 that identified ACM. These results, along with the Asbestos Operation and Management Plan, allow the base to efficiently and accurately abate ACM and protect workers and occupants. The Asbestos Operation and Management Plan assigns responsibilities and describes procedures to follow when asbestos concerns arise on Grand Forks AFB. ACM does not present a significant constraint to development or redevelopment (Grand Forks AFB 2present 001b).

Asbestos is a designated HAP under the CAA. Regulations to ensure compliance with the CAA are contained in the North Dakota Air Pollution Control Rules. The regulations are enforced by the NDDH Air Quality Division. The OSHA Asbestos Standard (29 CFR § 1926.58) also provides worker protection guidelines for employees who work around or remediate ACM. Friable ACM refers to any material containing more than one percent asbestos that can be crumbled, pulverized, or reduced to powder when dry, by using hand pressure or similar mechanical pressure.

Federal and state regulations require that all affected parts of a facility being renovated or demolished must be inspected by a state-certified inspector for the presence of ACM prior to beginning a renovation or demolition project. All RACM that will be disturbed as part of a renovation or demolition activity must be properly removed by state-certified individuals and properly disposed of in an approved landfill. RACM includes all friable ACM, as well as

nonfriable ACM that would be made friable during the project. A Notification of Demolition and Renovation Form must be submitted to the NDDH 10 days prior to beginning any demolition activity, whether or not asbestos is present.

3.13.7 Lead-based Paint

A LBP survey was conducted in 1994 in target housing and child-occupied facilities. This survey consisted of visual inspections to identify paint condition as well as actual chemical analyses of paint samples. A Lead-Based Paint Management Plan was also written in 1994 (Grand Forks AFB 2001b).

AFI 91-301 states that workers subjected to prolonged or repeated exposure to airborne LBP dust are working in a hazardous environment. OSHA standards (29 CFR § 1926.62) for lead in the construction industry state that all painted surfaces in which any detectable level of lead is present must be considered as having the potential to present an occupational exposure to lead to an employee engaged in OSHA-regulated construction work. Grand Forks AFB assumes the presence of LBP in any building constructed before 1978. As a policy, contractors are advised of the presence of LBP or the potential for LBP and are responsible for safeguarding their employees according to OSHA requirements. Buildings being demolished typically do not require LBP abatement, unless the LBP would be disturbed by sanding, scraping, dry-cutting, or torching.

3.14 Unavoidable Adverse Impacts

From an environmental perspective, there are no unavoidable adverse impacts. Therefore, this area has been eliminated from further study in this environmental assessment.

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 Introduction

This section presents the potential environmental consequences of implementing the proposed action and no action alternative. The potential impacts to the human and natural environment were evaluated relative to the existing environment described in Section 3.0. For each environmental resource or issue, anticipated direct and indirect effects were assessed, considering both short- and long-term project effects. Only minor impacts would be expected from implementing the proposed action.

4.2 Air Quality

Air quality at Grand Forks AFB would be impacted if operation of the aircraft or mission preparation activities resulted in an exceedance of the NAAQS or NDAAQS, exceedance of non-attainment criteria, or the exposure of sensitive receptors to increased pollutant concentrations.

4.2.1 Proposed Action

Implementation of the proposed action would have minor impacts on air quality. Although an applicability analysis is not required for implementing the proposed action since it is located in an attainment area, the potential air emissions of criteria pollutants from all sources would be much less than the *de minimis* exemption levels for conformity determinations in attainment/maintenance areas specified in 40 CFR § 93.153(b)(2).

The significance of impact to air quality is determined by comparing the effect of pollutant emissions resulting from a project or action with an appropriate air quality standard. If a standard is exceeded, the impact may be considered significant and require mitigation measures. Additional air emission sources expected as a result of this alternative include aircraft operations, aerospace ground equipment (AGE), government owned vehicles (GOV) and privately owned vehicles (POV). AGE includes all powered equipment, except refueling trucks, used in the maintenance and/or support of aircraft such as ground power units, start carts, air conditioners, heaters, hydraulic test stands, and lighting units. Table 2 shows the impact of moving numerous aircraft, including the DC-8 from Ames to Dryden. Since Table 2 includes more than just the DC-8 it significantly overestimates the impact of moving just the DC-8 to the Grand Forks AFB. Emissions from the aircraft were estimated with emission factors from the US Environmental

Protection Agency document AP-42, along with the unpublished emission factors from the Air Force's Armstrong Laboratory. The largest contribution to the emissions in Table 4-1 is from POVs, and is based on traffic levels considerably greater than those that would be seen at the GFAB for just the DC-8. Table 4-2 lists a more realistic estimate of annual emissions for expected POV traffic due to just the DC-8. Table 4-2 uses emission factors from the US EPA document AP-42.

Table 4-1. Annual VOC/NO_x Emission Estimates (tons per year) from the Relocation of Ames Aircraft to Dryden (CY 1998 - CY 2001).

SOURCE	VOC	NO_x
AGE	0.46	0.48
Aircraft	4.14	1.00
POVs	6.10	2.03
GOVs	0.18	0.23
Totals	10.88	3.74

Values for relocating just the DC-8 from Dryden to Grand Forks would be considerably lower.

Table 4-2. Annual Emission Estimates (tons per year) for POVs for the DC-8 Relocation to Grand Forks Air Force Base

	Pollutant		
SOURCE	CO	VOC	NO_x
POVs	2.879104	0.21911	0.32867

Replacing the POV emission values in Table 4-1 with those in Table 4-2 yield Total VOC and NO_x emissions of 5.00 and 2.04 tons per year respectively.

The annual emissions rates are well below the allowed 40 tons per year for VOCs or NO_xs. Therefore, a formal conformity determination is not required for this alternative. Impacts to air quality are not significant.

4.2.2 No Action Alternative

The baseline conditions would continue at Grand Forks AFB as described in Section 3.2. Since there would be no additional aircraft or support activities under this alternative, there would be no change to the ambient air quality in the region.

4.3 Environmental Management – Pollution Prevention and Geology and Soils

Resources at Grand Forks AFB would be impacted if the proposed activities resulted in changes to the pollution prevention programs at Grand Forks AFB, changed the geology in the area, or resulted in severe soil loss such that the area could no longer maintain the existing land use.

4.3.1 Proposed Action

The proposed action utilizes existing facilities. Flight operations will be similar to those currently carried out at the Grand Forks AFB. Laboratory set-up work performed in the hangar and on the aircraft will be in compliance with UND policies and procedures. Implementation of the proposed action would not result in adverse impacts to pollution prevention programs at Grand Forks AFB, geology in the area, or soils. Implementing this alternative would not accelerate the rate of erosion or degrade soil characteristics on Grand Forks AFB.

4.3.2 No Action Alternative

The baseline conditions would continue at Grand Forks AFB as described in Section 3.3. Since no construction or demolition activities would occur under this alternative, there would be no change to the environmental management resources in the region.

4.4 Water Resources

Water resources at Grand Forks AFB would be impacted if the proposed activities resulted in a change to the groundwater or surface water quantity or quality. Impacts would include any increase or decrease of the groundwater recharge area and storm water runoff because of implementing the proposed action.

4.4.1 Proposed Action

Implementing the proposed action would have no impact on water resources at the project area or Grand Forks AFB. Any planned discharges to storm water drainage ditches would be conducted in accordance with the NPDES permit for Grand Forks AFB.

4.4.2 No Action Alternative

The baseline conditions would continue at Grand Forks AFB as described in Section 3.4. Since there would be no construction or demolition activities occurring under this alternative, there would be no change to the water resources in the region.

4.5 Biological Resources

Biological resources at Grand Forks AFB would be impacted if implementation of the proposed action resulted in a change to vegetation communities or wildlife, including threatened or endangered species, in the area. Changes that reduce the viability of native vegetation in the area or eliminate viable wildlife populations would be considered significant.

4.5.1 Proposed Action

Implementing the proposed action would have no impact on biological resources located at the project areas or Grand Forks AFB. The long history (almost 50 years) of maintaining turf grass in the airfield operations area has resulted the formation of good habitat for grassland and neotropical birds. The Grand Forks AFB also has some rare plant species. The DC-8 should have no significant impact on rare plants or existing populations of grassland birds or neotropical migrants, as they currently are coexisting with KC-135 operations, and there will be no removal of habitat for this project. Since no threatened, or endangered species occur in the project area, there would be no impacts to these resources.

4.5.2 No Action Alternative

The baseline conditions would continue at Grand Forks AFB as described in Section 3.5. Implementing the no action alternative would not result in any impacts to biological resources since no construction or demolition activities would occur.

4.6 Cultural Resources

Potential impacts to cultural resources at Grand Forks AFB could occur if the proposed activity resulted in disturbance to presently unknown significant archeological deposits.

4.6.1 Proposed Action

Implementing the proposed action would not impact cultural resources located on or adjacent to the project area. The proposed activity would utilize a currently existing hangar, the airstrip, and existing ground support equipment and facilities.

Grand Forks AFB has not identified any Native American sacred sites or properties of traditional religious and cultural importance on the base. As part of the Environmental Analysis for the new Fire station and control tower, the base sent a letter to Native American groups in April 2003 requesting information on their traditional sites on Grand Forks AFB; no responses were received.

4.6.2 No Action Alternative

The no action alternative would result in no change to archeological, architectural, or traditional cultural resources, known and unknown, at Grand Forks AFB. Cultural resources would remain as described in Section 3.6.

4.7 Noise

An increase in noise exposure levels to 73 dB (24-hour average sound level) and above for one year (level that could cause hearing loss in a portion of the general public) would be considered a significant impact (U.S. Army 1978). There are no sensitive noise receptors (e.g., residential areas, hospitals, churches) within 4,000 feet of the project areas. Therefore, no impact to sensitive receptors would be expected as a result of implementing the proposed action.

4.7.1 Proposed Action

Implementing the proposed action would not result in impacts from noise. The noise levels, time of flights and flight patterns of the DC-8 would be similar to the current operations at Grand Forks AFB. This alternative would be consistent with the Grand Forks AFB AICUZ. Therefore, no long-term or major impact to the noise environment would occur from implementing the proposed action.

4.7.2 No Action Alternative

The baseline conditions would continue at Grand Forks AFB as described in Section 3.7. Implementing the no action alternative would not result in impact from noise since no construction or demolition activities would occur.

4.8 Socioeconomics

Socioeconomic resources would be impacted if implementation of the proposed action resulted in a change to the population, employment, or income potential of Grand Forks AFB and the ROI.

4.8.1 Proposed Action

Implementing the proposed action would have minor impacts to the socioeconomic conditions of the ROI. The proposed action would possibly involve relocation of 8 staff personnel to the ROI; therefore, no significant change to the population would be expected. The economic benefits would include increased research grants and funding potential for the University of North Dakota, thereby enhancing the local economy. The proposed action would create several permanent employment positions and could potentially increase the current employment opportunities at Grand Forks AFB and the ROI. The unemployment rate in the ROI is low (3.5 percent) and would not be impacted by the small increase in employment opportunities provided by the proposed action. Thus there would be a small, positive impact to the total personal income in the ROI.

4.8.2 No Action Alternative

The baseline conditions would continue at Grand Forks AFB as described in Section 3.8. Implementing the no action alternative would not result in socioeconomic impacts.

4.9 Environmental Justice

Environmental justice impacts would be considered if minority and/or low-income populations within or adjacent to the project area would feel disproportionate adverse effects from implementing the proposed action or alternatives.

4.9.1 Proposed Action

Implementing the proposed action would not result in environmental justice impacts since there are no low-income or minority populations within or immediately adjacent to the project area and since there would be no other long-term impacts associated with implementing the proposed action.

4.9.2 No Action Alternative

The baseline conditions would continue at Grand Forks AFB as described in Section 3.9. Implementing the no action alternative would not result in environmental justice impacts since no construction or demolition activities would occur.

4.10 Transportation

An impact to traffic and circulation would occur if implementation of the proposed action resulted in a change to the speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and transportation safety at Grand Forks AFB.

4.10.1 Proposed Action

Implementing the proposed action would not result in significant impacts to the transportation networks at Grand Forks AFB.

There would be a slight increase in the number of vehicles traveling to and from the AFB. Minimal impacts to transportation in the local area would be expected.

4.10.2 No Action Alternative

The baseline conditions would continue at Grand Forks AFB as described in Section 4.10. Implementing the no action alternative would not result in impacts to transportation networks since there would be no change in the number of vehicles at the AFB.

4.11 Environmental Programs

Environmental programs at Grand Forks AFB would be impacted if implementation of the proposed action resulted in a change to health and safety, hazardous materials and waste management, stored fuels, storm water and wastewater management, solid waste management, IRP, ACM abatement, and LBP abatement.

4.11.1 Proposed Action

Implementation of the proposed action would result in slight increase in the use, and storage of hazardous materials for flight operations of the DC-8 and, for set-up of research activities in the DC-8.

Hazardous materials used in laboratory and research activities would be managed under the University of North Dakota's Chemical Hygiene Plan in compliance with EPA regulations and

OSHA standards. Hazardous materials no longer needed for the DC-8 missions would be removed from the Grand Forks AFB by UND or DC-8 research staff. Hazardous material would be transported to Building 186 at UND. Waste determination and characterization would be made once the hazardous material arrived at Building 186 at UND. Hazardous wastes generated from laboratory and research activities would be disposed of by UND in accordance with EPA regulations and the University's waste management procedures. Tables 4-3 and 4-4 contain typical listings of hazardous chemicals and compressed gases that could be used on the aircraft and in the hangar. The listing is a compilation of all gases and chemicals used on past missions. The types and quantities of materials that may be used for the DC-8 mission are no different than chemicals in daily use at the University of North Dakota. Transportation of the chemicals to or from UND will also not pose any undue risk. Transported quantities will be small and all US Department of Transportation requirements will be followed.

Table 4-3. Typical Listing of Laboratory Chemicals

Chemical	Quantity	Comments
Acetone	50 ml	
Ammonia	3 ml	on permeation tube
Butanol	10 L	4 L used on the ground
EDTA	10 grams	Used on the ground
Ethanol	200 ml	
ethylene glycol/water	8 L	
Laser dyes	4L	in glycol/water
Laser dyes	14L	in propanol
Methanol	250 ml	
Ascarite	250 cc	
hopcolite catalyst	200 grams	
hydrogen peroxide	1 L	
hydroxylamine 30%	750 ml	
Methyl Hydroperoxide	1 L	
n-tridecane	200 ml	
PAN in n-tridecane	5 ml	PAN = peroxyacetyl nitrate
Formaldehyde	250 ml	
Para-formaldehyde	0.4 grams	
peroxidase enzyme	10 grams	Used on the ground
Potassium phthalate monobasic	500 grams	Used on the ground
Sodium bicarbonate	14 L	5L Used on the ground
Sodium hydroxide (aq)	250 ml	1M solution used on the plane
Sodium hydroxide (s)	250 grams	solid used on the ground

Chemical	Quantity	Comments
Dilute Sulfuric Acid	10 L	5L Used on the ground
dipicolinic acid 4mM	6 L	5L Used on the ground
Hydrochloric acid	250 ml	1M solution used on the plane
hydroxyphenylacetic acid	10 grams	Used on the ground
Nitric Acid	5 ml	
tartaric acid 2mM	6 L	5L Used on the ground
Liquid Nitrogen	50 L	For cooling equipment

Table 4-4. Typical Listing of Compressed Gases

Gas	Number of cylinders	Cylinder volume ft^3	Cylinder Pressure PSI
Nitric Oxide	5	0.03	500
5 ppm Nitric Oxide	1	1.04	2000
1 ppm Nitric Oxide	1	0.35	2000
10 ppm Nitrous Oxide	1	1.04	2000
1 ppm Nitrous Oxide	1	0.35	2000
Air	12	1.04	2200
Nitrogen	7	1.04	2000
Carbon dioxide	2	0.61	830
Helium	2	0.57	2200
Argon/Methane	1		
Hexafluoropropene	1	0.0053	60
5 ppb Tetrachloroethylene	1	1.04	2000
5% SF6	1		
10 ppm Sulfer dioxide	1		
1% Bis(trifluoromethyl)peroxide	1	0.0053	1000

Hazardous materials from flight operations would be the same as those currently generated at the AFB. Impacts would be minimized through HAZMART and by following the Grand Forks AFB Hazardous Waste Management Plan. Implementation of the proposed action would not impact stored fuels on Grand Forks AFB. The proposed action would not generate additional requirements for storm water and wastewater management at Grand Forks AFB.

ACM and LBP abatement in the hangar would be conducted as necessary in accordance with regulatory guidelines to ensure worker health and safety. These actions would provide long-term benefits for health and safety to personnel at Grand Forks AFB.

4.11.2 No Action Alternative

The baseline conditions would continue at Grand Forks AFB. Under the no action alternative, there would be no change to environmental programs.

4.12 Relationships Between Short-Term Uses of the Environment and Long-Term Productivity

The only short-term effects would be those associated with the renovation activities to implement research activities in the hangar. All activities will use currently existing facilities and do not include valuable resources such as prime cropland or wetlands. Consequently, there would not be a loss in long-term productivity of the environment.

4.13 Irreversible and Irretrievable Commitment of Resources

An irreversible effect would result from the use or destruction of resources (e.g., energy) that cannot be replaced within a reasonable time. An irretrievable effect would result from loss of resources (e.g., endangered species) that cannot be restored as a result of the proposed action.

All activities will use currently existing facilities, the only loss of resources would result from the additional fuel use to maintain the hangar and operate the aircraft. The amount of fuel used for these activities would represent a negligible amount compared to the amount of fuel used daily for operation of Grand Forks AFB. Other resource commitments would be neither irreversible nor irretrievable.

5.0 CUMULATIVE IMPACTS

This section provides: (1) a definition of cumulative effects, (2) a description of past, present, and reasonably foreseeable future actions relevant to cumulative effects analysis, (3) an assessment of the nature of interaction of the proposed action with other actions, and (4) a summary and evaluation of cumulative effects potentially resulting from these interactions.

5.1 Definition of Cumulative Impacts

The CEQ regulations stipulate that the cumulative effects analysis within an EA should consider the potential environmental impacts resulting from "the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions" (40 CFR § 1508.7). The scope must consider geographic and temporal overlaps among the proposed action and other actions. It must also evaluate the nature of interactions among these actions.

5.2 Past, Present, and Reasonably Foreseeable Future Actions

Temporary relocation of commercial aviation operations from the Grand Forks International Airport (GFK) in 2001 to Grand Forks AFB for the purpose of accommodating runway repairs at GFK is the most recent action similar to the proposed beddown of the NASA DC-8 airborne science research aircraft. There are no similar actions in the foreseeable future.

5.3 Analysis of Cumulative Impacts

Cumulative effects are likely to arise when a relationship or synergism exists between a proposed action and other actions expected to occur in a similar location or during a similar time period. Actions overlapping with or in proximity to the proposed action would be expected to have more potential for a relationship than those more geographically separated. Similarly, actions that coincide, even partially, in time would tend to offer a higher potential for cumulative effects.

To identify cumulative effects, the analysis needs to address three fundamental questions:

- Does a relationship exist such that affected resource areas of the proposed action might interact with the affected resource areas of past, present, or reasonably foreseeable future actions?

- If one or more of the affected resource areas of the proposed action and another action could be expected to interact, would the proposed action affect or be affected by impacts of the other action?
- If such a relationship exists, then does an assessment reveal any potentially significant impacts not identified when the proposed action is considered alone?

The scope of the cumulative effects analysis involves both the geographic extent of the effects and the time frame in which the effects could be expected to occur. Actions occurring within or adjacent to the region are considered relevant for cumulative effects analysis. Public documents prepared by federal, state, and local government agencies form the primary sources of information regarding reasonably foreseeable future actions. Documents used to identify other actions include notices of intent for an EIS or EA, management plans, land use plans, other NEPA studies, and economic and demographic projections.

5.4 Summary of Cumulative Effects

The potential impacts to issues and resource areas of interest in this EA are short-term and minor. No resources were found to have a long-term effect resulting from implementation of the proposed action. The incremental contribution of impacts of the proposed action, when considered in combination with other past, present, and reasonably foreseeable future actions, would be negligible. Overall, the analysis for this EA indicates that the proposed action would not result in, or contribute to, significant negative cumulative impacts to the resources in the region.

The USAF land use planning process is designed to ensure efficient use of available resources and that the functional relationships of land use arrangements meet the goals and objectives of the base. Limited growth is anticipated at Grand Forks AFB. No major mission changes or population fluctuations are anticipated in the foreseeable future (Grand Forks AFB 2001b).

6.0 REFERENCES

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U.S. Environmental Protection Agency (USEPA). 1995. United States Environmental Protection Agency, Compilation of Air Pollutant Factors, Stationary Point and Area Sources (AP-42). 5th Edition. U.S. Environmental Protection Agency, Ann Arbor, Michigan. January.

7.0 PERSONS AND AGENCIES CONTACTED

The Description of the Proposed Action and Alternatives (Sections 1 and 2 of the EA) for the action was sent to the North Dakota Department of Health, The North Dakota Game and Fish Department, and the State Historical Society of North Dakota to request their review in accordance with the EO on Intergovernmental Review of Federal Programs. Scoping letters and the Draft EA were sent to the following agencies to identify resources that may be impacted by the action.

Mr. L. David Glatt
Chief, Environmental Health Section
North Dakota Department of Health
600 East Boulevard Avenue
Bismarck, ND 58505-0200

Mr. Dean Hildebrand
Game and Fish Director
North Dakota Game and Fish Department
100 N. Bismarck Expressway
Bismarck, ND 58501-5095

Mr. Merlan E. Paaverud, Jr.
State Historic Preservation Officer
State Historical Society of North Dakota
612 East Boulevard Avenue
Bismarck, ND 58505-0200

Additional information was obtained from personnel at Grand Forks AFB. The following personnel were consulted.

Gary Williamson, 319 CES/CECp	Chris Bostrom, MSgt. 319 SFS/SFO
Robert Huddleston, MSgt. 319	Judy Stensland, 319 CES/CERR
Martin Rieff, MSgt., 319 ARW	Wayne Koop, Flight Chief
Gary Holman, SMSgt. 319 MXG/QA	Carl Wilkes, Fire Chief
Brad Ortzman, MSgt 319 AMXS/MXAK	Chris Klaus, Water Quality
Eric Brumskill, Maj. 319 OSS/OSO	Stephen Braun, ACM/LBP/UST
Gene Crouse, 319 OSS/OSAA	Heidi Nelson, Community Planner
John Butz, MSgt. 319 SFS/OSS	Scott Bassingthwaite, GIS
Wendell Hertzelle, Capt. 319 ARW/XPO	Larry Olderbak, IRP
Gary Severson, Capt. 319 ARW/XPO	Elaine Robbins, 319 CES/CERR
Phillip Canterbury, SMSgt. 319 CS/SCX	Fran Adams, 319 CPTS/FMA

Additional information was obtained from personnel at NASA. The following personnel were consulted.

George Postell, Chief, Acft. Office
Gary Shelton, SAIC Contractor
Steven G. Davis

The notice of availability for the FONSI will be published in the *Grand Forks Herald.*

LIST OF PREPARERS

Name	Experience	Role
Jason Uhlir University of North Dakota	M.S., 10 years of natural resources management and RCRA/CERCLA/OSHA	Purpose/Need, Description of Proposed Action and Alternatives, Cumulative Impacts, and Executive Summary sections. Format and editing
Greg Krause University of North Dakota	M.S., 15 years of natural resources management and RCRA/CERCLA	Affected Environment and Environmental Consequences sections

APPENDIX A

USAF Form 813, Public Notice, Regulatory Coordination Letters

REQUEST FOR ENVIRONMENTAL IMPACT ANALYSIS	Report Control Symbol RCS: 2004-288

INSTRUCTIONS: *Section I to be completed by Proponent; Sections II and III to be completed by Environmental Planning Function. Continue on separate sheets as necessary. Reference appropriate item number(s).*

SECTION I - PROPONENT INFORMATION

1. TO *(Environmental Planning Function)*	2. FROM *(Proponent organization and functional address symbol)*	2a. TELEPHONE NO.
319 CES/CEV	University of North Dakota Safety and Environmental Health	701-777-3341

3. TITLE OF PROPOSED ACTION

Beddown of Airborne Laboratory by 30 September 2004

4. PURPOSE AND NEED FOR ACTION *(Identify decision to be made and need date)*

Evaluate beddown of Airborne Laboratory for operation by UND at Grand Forks AFB by 30 September 2004. See reverse.

5. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES *(DOPAA) (Provide sufficient details for evaluation of the total action.)*

Beddown of Airborne Laboratory for operation by UND at Grand Forks AFB. See reverse.

6. PROPONENT APPROVAL *(Name and Grade)*	6a. SIGNATURE	6b. DATE
Jason Uhlir, Director Safety and Environmental Health	C. Uhl	20040706

SECTION II - PRELIMINARY ENVIRONMENTAL SURVEY. *(Check appropriate box and describe potential environmental effects Including cumulative effects.) (+ = positive effect; 0 = no effect; - = adverse effect; U= unknown effect)*	+	0	-	U
7. AIR INSTALLATION COMPATIBLE USE ZONE/LAND USE *(Noise, accident potential, encroachment, etc.)*	☐	☐	☒	☐
8. AIR QUALITY *(Emissions, attainment status, state implementation plan, etc.)*	☐	☐	☒	☐
9. WATER RESOURCES *(Quality, quantity, source, etc.)*	☐	☐	☒	☐
10. SAFETY AND OCCUPATIONAL HEALTH *(Asbestos/radiation/chemical exposure, explosives safety quantity-distance, bird/wildlife aircraft hazard, etc.)*	☐	☐	☒	☐
11. HAZARDOUS MATERIALS/WASTE *(Use/storage/generation, solid waste, etc.)*	☐	☐	☒	☐
12. BIOLOGICAL RESOURCES *(Wetlands/floodplains, threatened or endangered species, etc.)*	☐	☒	☐	☐
13. CULTURAL RESOURCES *(Native American burial sites, archaeological, historical, etc.)*	☐	☒	☐	☐
14. GEOLOGY AND SOILS *(Topography, minerals, geothermal, Installation Restoration Program, seismicity, etc.)*	☐	☒	☐	☐
15. SOCIOECONOMIC *(Employment/population projections, school and local fiscal impacts, etc.)*	☒	☐	☐	☐
16. OTHER *(Potential impacts not addressed above.)*	☐	☒	☐	☐

SECTION III - ENVIRONMENTAL ANALYSIS DETERMINATION

17. ☐ PROPOSED ACTION QUALIFIES FOR CATEGORICAL EXCLUSION (CATEX) # _____ ; OR
☒ PROPOSED ACTION DOES NOT QUALIFY FOR A CATEX; FURTHER ENVIRONMENTAL ANALYSIS IS REQUIRED.

18. REMARKS

This action is not "regionally significant" and does not require a conformity determination in accordance with 40 CFR 93.153(1). The total emission of criteria pollutants from the proposed action are below the de minimus thresholds and less than 10 percent of the Air Quality Region's planning inventory.

UND must prepare an analysis of environmental impacts with the preparation of a full Environmental Assessment (EA). The Environmental Impact Analysis Process is described in 32 CFR 989. Coordination of the EA shall be conducted with 319 CES.

19. ENVIRONMENTAL PLANNING FUNCTION CERTIFICATION *(Name and Grade)*	19a. SIGNATURE	19b. DATE
Wayne A.. Koop, R.E.M., GM-13 Environmental Management Flight Chief	W. Koop	14 JUL 04

Block 4: Purpose and Need for Action

4.1 Purpose of the Action:
The University of North Dakota (UND) proposes to assume elements of the suborbital science mission of the National Aeronautics and Space Administration (NASA) and bed it down at the Grand Forks Air Force Base (AFB). This mission today is performed by a modified DC-8 aircraft. The DC-8 allows NASA to conduct Earth science research and applications by providing an in-atmosphere observational capability to augment space-based systems, and to provide targeted characterizations of regional or localized phenomena at high spatial and temporal resolutions. The mission is currently operated from Edwards Air Force Base, California, however NASA desires to find another bed down location. UND intends to bring this unique mission and national asset in the form of a world-class airborne science laboratory to a university research and applications environment. The airborne laboratory collects data for many experiments in support of scientific projects serving the world-wide scientific community. Included in this research community are NASA, Federal (National Science Foundation and potentially other agencies) and state agencies, and academic and foreign atmospheric researchers. The DC-8 aircraft will remain a NASA owned airborne laboratory. UND will assume responsibility operations and maintenance. Headquarters Air Mobility Command (HQ AMC), 319th Air Refueling Wing (319 ARW), National Aeronautics and Space Administration (NASA), and the University of North Dakota (UND) representatives participated in a site survey at Grand Forks AFB ND from 5-6 May 04. The purpose of the site survey was to determine feasibility of the potential mission beddown of a NASA DC-8 aircraft.

4.2 Need for the Action:
NASA operates a DC-8 aircraft that supports their Earth Science Enterprise. This one-of-a-kind aircraft is currently based at Edwards AFB and is owned/funded/operated by NASA as an atmospheric research aircraft. NASA has decided to outsource the operating costs of this aircraft to cut expenditures. The University of North Dakota has a very active and growing aerospace research program and desires to operate this aircraft from the Grand Forks area, however, the local airport is too small to support operations of a DC-8. Runway length, takeoff weight, and hangar space requirements are not available. The UND submitted a site survey request to AF/ILEPB to determine the feasibility of bedding down this aircraft at Grand Forks AFB. AF/ILEPB approved the request on 31 Mar 04. NASA and UND will operate the aircraft to acquire data for a variety of earth science research projects. It is anticipated that approximately eight DC-8 maintenance and support personnel will be based with the aircraft full time. Office space near the aircraft is therefore required. High speed internet communications and office refurbishment will be the responsibility of UND to install or upgrade as necessary according to Air Force specifications. During the upload of scientific research projects, as many as thirty (typical) to one-hundred (rarely) additional scientific staff will require access to the aircraft . The aircraft and mission require approximately three upload cycles per year averaging six weeks each, and the additional scientific personnel are needed to support the payload upload cycles. These occasional personnel are comprised of university researchers, scientists and employees; support service contractors; and NASA or other government agency personnel. None of the work is classified in nature and the aircraft does not require any special security. Minimal local flying will occur for this mission.

Block 5: Description of Proposed Action and Alternatives

5.1 Description of the Proposed Action: Beddown of Airborne Laboratory for operation by UND at Grand Forks AFB by 30 September 2004. Beddown is requested beginning September 30, 2004 to allow orderly transfer of funding from NASA to UND at the end of Federal FY04. The first upload of scientific equipment is expected to occur in late December 2004 or early January 2005. No new major construction is required. Grand Forks AFB Hangar 600 would be the UND office site, as well as the preferred payload upload site.

5.2 Decision that must be made: Determine the feasibility of the potential mission beddown of a NASA DC-8 aircraft at Grand Forks AFB. Continued on following page.

5.3 Anticipated environmental issues: An Environmental Impact Analysis Process will have to be completed and funded by UND for this mission beddown. An Environmental Baseline Survey will also have to be conducted. The NASA DC-8 will have Hazardous Material maintained in Hangar 600 and will be managed in accordance with base policy. Anticipated hazardous waste streams will be managed by UND. The addition of the NASA aircraft, with the same engines and ramp footprint as existing KC-135Rs, will not increase the noise or pollution footprint beyond the existing baseline.

5.5.1 No Action Alternative: UND would not beddown the Airborne Laboratory for Operation at Grand Forks AFB.

5.5.2 Second Alternative Action: Beddown Airborne Laboratory at Minot AFB, the next nearest facility which meets the runway length and takeoff weight requirements. This location is 210 miles from UND.

5.5.3 Third Alternative Action: Beddown Airborne Laboratory at Minneapolis International Airport, which meets the runway length and takeoff weight requirements. This location is 315 miles from UND. Hangars are privately owned by commercial airlines. Airborne Laboratory flights would interrupt commercial airline activities.

Public Notice

Appeared in the Sunday editions of the Grand Forks Herald on August 8, 2004; August 15, 2004; August 22, 2004; and August 29, 2004.

PUBLIC COMMENT

The University of North Dakota is exploring the possibility of contracting to operate NASA's DC-8 Scientific Research Aircraft, which would be located at the Grand Forks Air Force Base. In compliance with U.S. Air Force requirements, an Environmental Assessment (EA) and a Finding of No Significant Impact (FONSI) have been prepared. Public comment is solicited. Both documents can be reviewed at the Safety Office, Room 202, Auxiliary Services Building, 3851 Campus Road in Grand Forks, or on-line at http://www.safety.und.edu/. Written comments or inquiries regarding the EA and FONSI should be directed to Jason Uhlir at the UND Safety Office, Box 9031, Grand Forks, ND 58202, telephone (701) 777-3341. The deadline for written comments is Sept. 7, 2004.

UNIVERSITY OF UND NORTH DAKOTA

DAY FILE

SAFETY & ENVIRONMENTAL HEALTH
P.O. BOX 9031
GRAND FORKS, NORTH DAKOTA 58202-9031
PHONE (701) 777-3341
FAX (701) 777-4132
www.safety.und.edu

August 1, 2004

Mr. L. David Glatt, Chief
Environmental Health Section
North Dakota Department of Health
600 East Boulevard Avenue
Bismarck, ND 58505-0200

RE: Environmental Assessment for Proposed Beddown of a NASA DC-8 Airborne Science Research Aircraft at Grand Forks Air Force Base, North Dakota.

Dear Mr. Glatt:

The UND Safety and Environmental Health Office has prepared an environmental assessment on the above referenced project. The attached *Draft Environmental Assessment* provides details of the action for your review in accordance with the President's Executive Order on Intergovernmental Review of Federal Programs. Please identify resources within your agency's responsibility that may be impacted by the action. Comments should be sent within 15 days of receipt of this letter to:

Mr. Jason Uhlir, UND Safety & Env. Health
Box 9031
Grand Forks, ND 58202

Your assistance in providing information is greatly appreciated. If you have any questions, please call Mr. Uhlir at 701-777-3341.

Sincerely,

Jason C. Uhlir

Jason Uhlir, Director
Safety and Environmental Health/Risk Mgmt.
University of North Dakota

Attachment:
Draft Environmental Assessment

NORTH DAKOTA DEPARTMENT OF HEALTH
Environmental Health Section

Location:
1200 Missouri Avenue
Bismarck, ND 58504-5264

Fax #:
701-328-5200

Mailing Address:
P.O. Box 5520
Bismarck, ND 58506-5520

August 6, 2004

Mr. Jason Uhlir
UND Safety & Env. Health
P.O. Box 9031
Grand Forks, ND 58202

Re: Environmental Assessment for Proposed Beddown of a NASA DC-8 Aircraft
Grand Forks Air Force Base, Grand Forks County

Dear Mr. Uhlir:

This department has reviewed the information concerning the above-referenced project submitted under date of August 1, 2004, with respect to possible environmental impacts. We do not expect any environmental impacts from this project.

If you have any questions regarding our comments, please feel free to contact this office.

Sincerely,

L. David Glatt, Chief
Environmental Health Section

LDG:cc

UNIVERSITY OF UND NORTH DAKOTA

SAFETY & ENVIRONMENTAL HEALTH
P.O. BOX 9031
GRAND FORKS, NORTH DAKOTA 58202-9031
PHONE (701) 777-3341
FAX (701) 777-4132
www.safety.und.edu

September 14, 2004

Mr. Merlan E . Paaverud, Jr .
State Historic Preservation Officer
State Historical Society of North Dakota
612 East Boulevard Avenue
Bismarck, ND 58505-0200

RE: Environmental Assessment for Proposed Operation of a NASA DC-8 Airplane

Dear Mr. Paaverud :

The UND Safety and Environmental Health Office has prepared an environmental assessment on the above referenced project. The attached *Draft Environmental Assessment* provides details of the action for your review in accordance with the President's Executive Order on Intergovernmental Review of Federal Programs. Please identify resources within your agency's responsibility that may be impacted by the action. Comments should be sent within 15 days of receipt of this letter to:

Greg Krause
University of North Dakota, Safety Office
Box 9031
Grand Forks, ND 58202

Your assistance in providing information is greatly appreciated. If you have any questions, please call me at 701-777-3341 .

Sincerely,

Greg Krause, P.E.
Director, Radiation & Chemical Safety

Attachment:
Draft Environmental Assessment

STATE HISTORICAL SOCIETY OF NORTH DAKOTA

September 29, 2004

Greg Krause
University of North Dakota, Safety Office
Box 9031
Grand Forks, ND 58202

ND SHPO Ref.: 97-0527au, EA, NASA DC-8 Beddown, Grand Forks AFB, ND.

Dear Mr. Krause:

We have reviewed: Environmental Assessment: *Beddown of NASA DC-8 at Grand Forks Air Force Base, Grand Forks, North Dakota*, draft version of July 2004.

If consulted by the lead agency, we would concur with "No Historic Properties Affected" determination provided the project is of the nature specified and takes place in the legal description outlined in the draft EA.

Thank you for the opportunity to review this project. Please include the ND SHPO Reference number listed above in any further correspondence for this specific project. If you have any questions please contact Duane Klinner at (701) 328-3576.

Sincerely,

Merlan E. Paaverud, Jr.
State Historic Preservation Officer
(North Dakota)

cc: Kristen Rundquist, Gand Forks AFB

UNIVERSITY OF UND NORTH DAKOTA

SAFETY & ENVIRONMENTAL HEALTH
P.O. BOX 9031
GRAND FORKS, NORTH DAKOTA 58202-9031
PHONE (701) 777-3341
FAX (701) 777-4132
www.safety.und.edu

September 14, 2004

Mr. Dean Hildebrand
Game and Fish Director
North Dakota Game and Fish Department
100 N. Bismarck Expressway
Bismarck, ND 58501-5095

RE: Environmental Assessment for Proposed Operation of a NASA DC-8 Airplane

Dear Mr. Hildebrand :

The UND Safety and Environmental Health Office has prepared an environmental assessment on the above referenced project. The attached *Draft Environmental Assessment* provides details of the action for your review in accordance with the President's Executive Order on Intergovernmental Review of Federal Programs. Please identify resources within your agency's responsibility that may be impacted by the action. Comments should be sent within 15 days of receipt of this letter to:

Greg Krause
University of North Dakota, Safety Office
Box 9031
Grand Forks, ND 58202

Your assistance in providing information is greatly appreciated. If you have any questions, please call me at 701-777-3341 .

Sincerely,

Greg Krause, P.E.
Director, Radiation & Chemical Safety

Attachment:
Draft Environmental Assessment

North Dakota Game & Fish Dept.
100 N. Bismarck Expressway
Bismarck, ND 58501-5095

We have reviewed the project and foresee no identifiable conflict with wildlife or wildlife habitat based on the information provided.

(for) Michael G. McKenna
Chief, Conservation & Communication Division
Date: 9/20/04

North Dakota
Department of Commerce

Community Services

Economic
Development & Finance

Tourism

Workforce Development

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EQUAL HOUSING OPPORTUNITY

December 28, 2004

Diane M. Strom
Dept. of the Air Force
319 CES/CEVA
525 Tuskegee Airmen Blvd.
Grand Forks AFB, ND 58205-6434

"Letter of Clearance" In Conformance with the North Dakota Federal Program Review System - State Application Identifier No.: ND041228-0547

Dear Ms. Strom:

SUBJECT: FONSI - NASA DC-8 Beddown at Grand Forks AFB, North Dakota

The above referenced FONSI has been reviewed through the North Dakota Federal Program Review Process. As a result of the review, clearance is given to the project only with respect to this consultation process.

If the proposed project changes in duration, scope, description, budget, location or area of impact, from the project description submitted for review, then it is necessary to submit a copy of the completed application to this office for further review.

We also request the opportunity for complete review of applications for renewal or continuation grants within one year after the date of this letter.

Please use the above SAI number for reference to the above project with this office. Your continued cooperation in the review process is much appreciated.

Sincerely,

James R Boyd

James R. Boyd
Manager of Governmental Services

jml

STAFF SUMMARY SHEET

	TO	ACTION	SIGNATURE (Surname), GRADE AND DATE		TO	ACTION	SIGNATURE (Surname), GRADE AND DATE
1	319 MSG/CC	Coord	[signature] 23	6			
2	319 ARW/JA	Coord	[signature] 25Oct04	7			
3	319 ARW/CV	Sign	[signature] Col 27Oct04	8			
4				9			
5				10			

SURNAME OF ACTION OFFICER AND GRADE	SYMBOL	PHONE	TYPIST'S INITIALS	SUSPENSE DATE
Mr. Koop, GS-13	319 CES/CEV	7 4590	wk	

SUBJECT	DATE
NASA DC-8 Potential Beddown at Grand Forks AFB	17Oct04

SUMMARY

1. The National Aeronautics and Space Administration (NASA) and the University of North Dakota (UND) propose to beddown a NASA DC-8 airborne science research aircraft at Grand Forks AFB to support NASA's Earth Science Enterprise. An Environmental Assessment (Tab 1 attachment) resulting in a Finding of No Significant Impact (FONSI) has been prepared and already approved/signed by UND President Kupchella. The FONSI also requires AMC/CV approval/signature. A letter has been prepared at Tab 1 to route the FONSI to the AMC/A75, the directorate responsible to orchestrate non-AF use of AF facilities.

2. RECOMMENDATION: The ARW/CC sign the letter at Tab 1 requesting AMC/A75 to process the FONSI up to AMC/CV for approval.

[signature]

PATRICK F. FOGARTY, Lt Col, USAF
Base Civil Engineer

Tab
Letter of Request

Tracking Number: 3178

319 CES/CEV General Correspondence					
SUBJECT	EA/FONSI for NASA DC-8 Beddown				
DATE RCV'D	10/13/2004	**OPR NAME**	Wayne Koop	**OPR ORG**	319 CES/CEV / CEV
SUSPENSE	10/22/2004	**RETURNED**		**TRANS#**	3178

Squadron Review Processing:

OFFICE SYMBOL	INITIALS/DATE	REMARKS
CCA		
CCC		
CCS		
CCE CEV	CWP 13Oct MH 14Oct	
CD		
CC		

DATE RECEIVED ~~BACK FROM SQUADRON~~: GROUP

OFFICE SYMBOL	INITIALS/DATE	REMARKS
CCA		
CCC		
CCS	20Oct 04 SB	
CCE	MH 20Oct04	Back for Corrections
CD		
CC		

DATE RECEIVED BACK FROM SQUADRON:

OFFICE SYMBOL	INITIALS/DATE	REMARKS
CCA	27/10	
CCC		
CCS	25Oct JMJ	
CCE	27 OCT MM	
CD	[illegible]	
~~CC~~		

ADDITIONAL REMARKS:

TO MSG/CC/CD -

(2) Need to change the sign block for Col Reese to Commander

(2)

10/19

Carter Tracy K Civ 319 CES/CEV

From: Koop Wayne A Civ 319 CES/CEV
Sent: Wednesday, October 13, 2004 3:14 PM
To: Carter Tracy K Civ 319 CES/CEV
Cc: Strom Diane M Civ 319 CES/CEVA
Subject: NASA/DC-8 SSS/Ltr to AMC/A75

AMC/A75 is the directorate responsible to process requests for and supporting documentation for non-AF use of AF properties.
Process package asap. Thanx.


NASADC-8 Trans Ltr.doc (31 KB)...


NASA FONSI Ltr SSS.xfd (25 KB)...

Wayne A. Koop DSN 362-4590
CES Environmental Manager

ENGINEERING REVIEW COMMENTS
(COMPUTER GENERATED FORM)

BASE		
Grand Forks AFB		

NAME OF REVIEWER		
RAKNERUD	DC-8 Beddown	

DD FORM 1391	PROJECT BOOK	CONCEPT	X	30% DESIGN

DRAWING OR PARAGRAPH #	CMT #		
3.13.2	1	There is no discussion of how hazardous wastes will be transported from Grand Forks AFB to UND. If the material meets the definition of "hazardous waste", it must be manifested prior to transport. Therefore the issue of transportationa and manifesting should be discussed. NOTE: Only designated GFAFB personnel may sign manifests as generators.	
	2	If hazardous waste is generated, will it be accumulated on site prior to transport? If so, the site location and management must be coordinated with CEV.	
	3	If possible, we suggest that hazadous material be handled in such a manner as to meet the definition of a material until it arrives at UND, at which time it may be processed and managed as a hazardous waste	
	4	Globally replace hangar with hangar as in "hangar 600".	

Strom Diane M Civ 319 CES/CEVA

From: Strom Diane M Civ 319 CES/CEVA
Sent: Friday, July 23, 2004 8:52 AM
To: Koop Wayne A Civ 319 CES/CEV
Subject: Draft EA for UND NASA DC-8 (suspense Fri 23 Jul)

The following are my comments to the draft EA:

Page 2-13, Paragraph 2.7:
The statement "The consequences of taking no action would result in further deterioration of facilities, inadequate fire protection, and substandard ATC activities" seems inaccurate. In my opinion, the consequences of taking no action would include no change in activities for the Grand Forks AFB, and the potential loss of a new science research aircraft program for UND.

Page 3-8, Paragraph 3.6.2:
Buildings 306 and 313 were demolished in 2003. The paragraph 3.6.2 and the table 3-3 are worded to list these two buildings as Potential Eligible Resources pending an agreement with the State Historical Society of North Dakota or a decision by the Keeper of the National Register. These two buildings should be deleted from the table, and the paragraph reworded.

Page 4-3, Paragraph 4.3.1, line 5:
Grand Forks AFB needs to be capitalized.

Page xi, Acronyms and Abbreviations, add the following:

AGE	air ground equipment
ARW	Air Refueling Wing
CPTS	Comptroller Squadron
CS	Communication Squadron
dB	decibel
DD	Department of Defense
EIAP	Environment Impact Analysis Process
EPA	Environmental Protection Agency
GIS	Geographic Information System
GFK	Grand Forks International Airport
GOV	government owned vehicle
MSP	Minneapolis/St Paul Airport
MXG	Maintenance Group
NRHP	National Register of Historic Places
OSS	Operations Support Squadron
POV	privately owned vehicle
SAIC	unknown (contractor in part 7.0 Agencies Contacted)
SFS	Security Forces Squadron

Diane M. Strom, 319 CES/CEVA
NEPA/EIAP Program
(701) 747-6394

-----Original Message-----
From: Koop Wayne A Civ 319 CES/CEV

Sent: Tuesday, July 20, 2004 9:09 AM
To: Strom Diane M Civ 319 CES/CEVA
Subject: Draft EA for UND NASA DC-8 (suspense Fri 23 Jul)
Importance: High

Diane: Pls perform a review on the draft EA asap to ensure it meets AF/base requirements. Thanx.

Wayne A. Koop DSN 362-4590
CES Environmental Manager

EIAP Checklist

EBS for
Title Airborne Laboratory (NASA - DC8) RCS# 2004-288

Coordination Email Sent: 7.20.04 due 7.27.04 Date Received UND prepared EA

ADS/SGGB (Bio)	N - 15Nov04 - signed cert
ARW/JA (Legal)	7.21.04 no negative comments. Cert 26oct04.
ARW/SE (Safety)	N Cert signed 27 Oct 04.
CES/CECP (Community Planner)	N
CES/CEV (Env)	17Nov 04 - signed EBS.
CES/CEVC (Natural/Cultural/Air)	2Aug 04
CES/CEVC (Asbestos/LBP/tanks)	7.21.04 no comments
CES/CEVC (Water Mgr)	7.22.04 looks good to me
CES/CEVP (Haz Mat/Waste)	27 Jul 04 w/comments
CES/CEVR (IRP)	N
OSS/OSA (Airfield Operations)	N
ces/ceva Comments to Cev	7.23.04

Public Notice Expiration: 7Sep 04
UND to publish
Coordination w/Public Affairs N

Base Leader N
GF Herald 15Aug 04

Route

CEV EBS. 17Nov 04 - signed
Legal EA. 25Oct04. EBS. 26 Oct 04.
ARW/CV Col Reese. 28Oct 04
AMC FONSI signed 21 Dec 04

External

ND Department of Health	6Aug 04
ND Game and Fish	20 Sep 04
State Historical Society of ND	29Sep 04

ND Div Comm Serv. 28Dec 04. Rec 30 Dec 04.

EBS file includes:
- 813 ✓
- Certifications ✓ legal safety bio
- EBS ✓
- Maps ✓
- Photos ✓
- Interviews ✓
- References
- Title, Deeds Real Property
- License N
- Sampling N
- Contract N
- IRP documents N
- Permits, NOVs N
- EIAP Checklist ✓

EA file includes:
- Signed 813 ✓
- Signed FONSI ✓ 21 Dec 04
- Final EA ✓
- maps w/in
- photos N
- Easement,etc N
- Signed legal review ✓
- Affidavit of Publication UND statement
- Letters to and Responses from SHPO ✓, NDDH ✓, NDGF ✓, NDDCS ✓
- Staff Summary Sheet ✓
- Library Ltr public review N
- EIAP Checklist ✓

CEV/NO legal comments sent to UND 28Jul04 via ✓
22 Sep 04. took 30 photos. SFS required erase - no letter OG/pc - prepared letter for Wayne

Copy	Send copy to Proponent of signed 813. EA - UND. EBS - Real Property.	✓
	FONSI – one single sided Copy for Wayne & EPC.	✓
	+ EA to Gary Williamson for project folder.	NA
	+813 +EA to Real Property if they initiated 813. 18Nov04 EBS	✓
	one copy of FONSI to Division of Community Services.	✓
Filing	Update EIAP Master Log – change color from yellow to green or red. white	I
	Update data (My Network Places/public on Jfsd2csw2da101/Records Mgmt/45-other Records Mgmt Ops T37-19R17-00/04-319 MSG/02-CES/25-CEV/01-CEVA/68-T032-01R03.00/C-EIAP Log)	I
	Update Master Log on H:/env_eng on 'Fsjfsd41009'/CEVA/EIAP Logs/Old Logs/EIAP Log Master)	✓
	Update FY Log on H drive. ....Fsjfsd41009'/CEVA/EIAP Logs/Old Logs/EIAP Log current FY)	✓
	Move File folder from H drive to official record:	✓
	(My Network Places/public on Jfsd2csw2da101/Records ....T032-01R03.00/B-General Assessments)	
	Originals to Tracy for scanning and filing.	I
	Hard copy log	✓